FOURTEENTH ANNUAL REPORT

UNIVERSITY OF MARYLAND

EXTENSION SERVICE

TECHNOLOGY AND S...

ERSITY OF MARYLAND
LIBRARY
MAY 16 1961

FOR THE YEAR 1928

Co-operative Extension Work In Agriculture and Home Economics
Extension Service, University of Maryland, and the
United States Department of Agriculture
Co-operating.

T. B. SYMONS, Director

Distributed in furtherance of acts of Congress of
May 8 and June 30, 1914.

THE BOARD OF REGENTS OF THE UNIVERSITY OF MARYLAND AND THE MARYLAND STATE BOARD OF AGRICULTURE

SAMUEL M. SHOEMAKER, Chairman	Eccleston, Md.
JOHN M. DENNIS, Treasurer	Riderwood, Md.
DR. FRANK J. GOODNOW	Baltimore, Md.
DR. W. W. SKINNER, Secretary	Kensington, Md.
HENRY HOLZAPFEL, Jr.,	Hagerstown, Md.
JOHN E. RAINE	Towson, Md.
CHARLES C. GELDER	Princess Anne, Md.
E. BROOKE LEE	Silver Spring, Md.
GEORGE M. SHRIVER	Baltimore, Md.
RAYMOND A. PEARSON	President and Executive Officer.

OFFICERS, EXTENSION SPECIALISTS AND AGENTS

R. A. PEARSON, President of the University

* T. B. SYMONS, Director

* F. B. BOMBERGER	Assist. Director and Chief, State Dept. of Markets.
* E. I. OSWALD	District Agent.
* MISS VENIA M. KELLAR	State Home Demonstration Agent.
* MISS DOROTHY EMERSON	Girls' Club Agent.
* MISS MARGARET McPHEETERS	Nutrition Specialist.
* MISS HELEN SHELBY	Clothing Specialist.
* MISS EDYTHE TURNER	District Home Demonstration Agent.
* MISS FLORENCE MASON	District County Home Demonstration Agent.
W. R. BALLARD	Specialist in Vegetable and Landscape Gardening.
H. C. BARKER	Specialist in Dairying, Advanced Registry Testing.
M. D. BOWERS	Specialist in Agricultural Journalism.
† R. W. CARPENTER	Specialist in Farm Engineering.
O. R. CARRINGTON	Assistant Specialist in Agricultural Journalism.
K. A. CLARK	Specialist in Animal Husbandry.
J. A. CONOVER	Specialist in Dairying.
† E. N. CORY	Specialist in Entomology.
† S. H. DeVAULT	Assistant Specialist in Marketing.
L. M. GOODWIN	Specialist in Canning Crops.
CASTILLO GRAHAM	Assistant Entomologist.
W. T. HENEREY	Assistant in Insect Control.
H. A. HUNTER	Canning Crops Pathologist.
† R. A. JEHLE	Specialist in Pathology.
* E. G. JENKINS	State Boys' Club Agent.
† DeVOE MEADE	Specialist in Animal Husbandry.
F. W. OLDENBURG	Specialist in Agronomy.
† W. B. POSEY	Specialist in Tobacco.
W. H. RICE	Specialist in Poultry.
† C. S. RICHARDSON	Specialist in Educational Extension.
P. D. SANDERS	Horticultural Inspector.
S. B. SHAW	Chief Inspector and Specialist in Marketing.
† W. T. L. TALIAFERRO	Specialist in Farm Management.
† C. E. TEMPLE	Specialist in Pathology.
F. B. TRENK	Specialist in Forestry.
A. F. VIERHELLER	Specialist in Horticulture.

COUNTY DEMONSTRATION AGENTS

County	Name	Headquarters
Allegany	* R. F. McHenry	Cumberland
Anne Arundel	* S. E. Day	Annapolis
Baltimore	* H. B. Derrick	Towson
Calvert	* J. B. Morsell	Prince Frederick
Caroline	* T. D. Holder	Denton
Carroll	* L. C. Burns	Westminster
Cecil	* T. H. Bartilson	Elkton
Charles	* P. D. Brown	La Plata
Dorchester	* W. R. McKnight	Cambridge
Frederick	* H. R. Shoemaker	Frederick
Garrett	* J. H. Carter	Oakland
Harford	* H. M. Carroll	Bel Air
Harford	* W. H. Evans (Assistant)	Bel Air
Howard	* J. W. Magruder	Ellicott City
Kent	* J. D. McVean	Chestertown
Kent	* J. Z. Miller (Assistant)	Chestertown
Montgomery	* O. W. Anderson	Rockville
Montgomery	* A. A. Ady (Assistant)	Rockville
Prince George's	* W. B. Posey	Upper Marlboro
Prince George's	* Perry E. Clark (Assistant)	Upper Marlboro
Queen Anne's	* E. W. Grubb	Centerville
St. Mary's	* G. F. Wathen	Loveville
Somerset	* C. Z. Keller	Princess Anne
Talbot	* R. S. Brown	Easton
Washington	* M. D. Moore	Hagerstown
Wicomico	* J. P. Brown	Salisbury
Worcester	* R. T. Grant	Snow Hill

(Continued on Third Cover Page)

FOURTEENTH ANNUAL REPORT

UNIVERSITY OF MARYLAND

EXTENSION SERVICE

FOR THE

YEAR 1928

THE BOARD OF REGENTS OF THE UNIVERSITY OF MARYLAND AND THE MARYLAND STATE BOARD OF AGRICULTURE

SAMUEL M. SHOEMAKER, Chairman	Eccleston, Md.
JOHN M. DENNIS, Treasurer	Riderwood, Md.
DR. FRANK J. GOODNOW	Baltimore, Md.
DR. W. W. SKINNER, Secretary	Kensington, Md.
HENRY HOLZAPFEL, Jr.,	Hagerstown, Md.
JOHN E. RAINE	Towson, Md.
CHARLES C. GELDER	Princess Anne, Md.
E. BROOKE LEE	Silver Spring, Md.
GEORGE M. SHRIVER	Baltimore, Md.
RAYMOND A. PEARSON	President and Executive Officer.

OFFICERS, EXTENSION SPECIALISTS AND AGENTS

R. A. PEARSON, President of the University

* T. B. SYMONS, Director

* F. B. BOMBERGER	Assist. Director and Chief, State Dept. of Markets.
* E. I. OSWALD	District Agent.
* MISS VENIA M. KELLAR	State Home Demonstration Agent.
* MISS DOROTHY EMERSON	Girls' Club Agent.
* MISS MARGARET McPHEETERS	Nutrition Specialist.
* MISS HELEN SHELBY	Clothing Specialist.
* MISS EDYTHE TURNER	District Home Demonstration Agent.
* MISS FLORENCE MASON	District County Home Demonstration Agent.
W. R. BALLARD	Specialist in Vegetable and Landscape Gardening.
H. C. BARKER	Specialist in Dairying, Advanced Registry Testing.
M. D. BOWERS	Specialist in Agricultural Journalism.
† R. W. CARPENTER	Specialist in Farm Engineering.
O. R. CARRINGTON	Assistant Specialist in Agricultural Journalism.
K. A. CLARK	Specialist in Animal Husbandry.
J. A. CONOVER	Specialist in Dairying.
† E. N. CORY	Specialist in Entomology.
† S. H. DeVAULT	Assistant Specialist in Marketing.
L. M. GOODWIN	Specialist in Canning Crops.
CASTILLO GRAHAM	Assistant Entomologist.
W. T. HENEREY	Assistant in Insect Control.
H. A. HUNTER	Canning Crops Pathologist.
† R. A. JEHLE	Specialist in Pathology.
* E. G. JENKINS	State Boys' Club Agent.
† DeVOE MEADE	Specialist in Animal Husbandry.
F. W. OLDENBURG	Specialist in Agronomy.
† W. B. POSEY	Specialist in Tobacco.
W. H. RICE	Specialist in Poultry.
† C. S. RICHARDSON	Specialist in Educational Extension.
P. D. SANDERS	Horticultural Inspector.
S. B. SHAW	Chief Inspector and Specialist in Marketing.
† W. T. L. TALIAFERRO	Specialist in Farm Management.
† C. E. TEMPLE	Specialist in Pathology.
F. B. TRENK	Specialist in Forestry.
A. F. VIERHELLER	Specialist in Horticulture.

COUNTY DEMONSTRATION AGENTS

County	Name	Headquarters
Allegany	* R. F. McHenry	Cumberland
Anne Arundel	* S. E. Day	Annapolis
Baltimore	* H. B. Derrick	Towson
Calvert	* J. B. Morsell	Prince Frederick
Caroline	* T. D. Holder	Denton
Carroll	* L. C. Burns	Westminster
Cecil	* T. H. Bartilson	Elkton
Charles	* P. D. Brown	La Plata
Dorchester	* W. R. McKnight	Cambridge
Frederick	* H. R. Shoemaker	Frederick
Garrett	* J. H. Carter	Oakland
Harford	* H. M. Carroll	Bel Air
Harford	* W. H. Evans (Assistant)	Bel Air
Howard	* J. W. Magruder	Ellicott City
Kent	* J. D. McVean	Chestertown
Kent	* J. Z. Miller (Assistant)	Chestertown
Montgomery	* O. W. Anderson	Rockville
Montgomery	* A. A. Ady (Assistant)	Rockville
Prince George's	* W. B. Posey	Upper Marlboro
Prince George's	* Perry E. Clark (Assistant)	Upper Marlboro
Queen Anne's	* E. W. Grubb	Centerville
St. Mary's	* G. F. Wathen	Loveville
Somerset	* C. Z. Keller	Princess Anne
Talbot	* R. S. Brown	Easton
Washington	* M. D. Moore	Hagerstown
Wicomico	* J. P. Brown	Salisbury
Worcester	* R. T. Grant	Snow Hill

(Continued on Third Cover Page)

FOURTEENTH ANNUAL REPORT

UNIVERSITY OF MARYLAND

EXTENSION SERVICE

FOR THE

YEAR 1928

LETTERS OF TRANSMITTAL

DR. R. A. PEARSON,

President, University of Maryland:

I have the honor to submit herewith the Fourteenth Annual Report covering the work of the Extension Service of the University of Maryland, in co-operation with the U. S. Department of Agriculture, for the calendar year 1928, together with a financial report for the fiscal year ending June 30, 1928.

Respectfully submitted,

THOMAS B. SYMONS,
Director, Extension Service.

January 1, 1929.

HON. S. M. SHOEMAKER,

Chairman, Board of Regents:

In accordance with the requirements of the Act of Congress, approved May 8, 1914, and known as the Smith-Lever Act, I have the honor to transmit herewith, for submission to the Governor of the State, the Fourteenth Annual Report covering the work of the Extension Service of the University of Maryland, in co-operation with the U. S. Department of Agriculture, for the calendar year 1928, together with a financial report for the fiscal year ending June 30, 1928.

Respectfully submitted,

R. A. PEARSON,
President.

January 1, 1929.

TO HIS EXCELLENCY ALBERT C. RITCHIE,

Governor of Maryland:

I have the honor to transmit herewith the Fourteenth Annual Report covering the work of the Extension Service of the University of Maryland, in co-operation with the U. S. Department of Agriculture, submitted to me through the President of the University.

Respectfully submitted,

S. M. SHOEMAKER,
Chairman, Board of Regents.

January 1, 1929.

FOURTEENTH ANNUAL REPORT

OF THE

UNIVERSITY OF MARYLAND

EXTENSION SERVICE

FOR THE YEAR 1928.

By THOMAS B. SYMONS, *Director.*

Introduction

Adverse economic tendencies and unfavorable weather conditions imposed their handicaps upon the agricultural industry of Maryland during the past year.

While the influence of these two unfavorable factors was not general, and was felt in the field of crop production chiefly, the net result, at the end of the year, was to place the economic and financial condition of the State's agriculture on a less satisfactory plane than it occupied the year before.

In reviewing the dominant conditions of the year, the hazards which the farmer must constantly face and over which he has but little if any control, stand out most strikingly. The weather, marked by two severe wind and rain storms during the height of the growing season, severely injured the corn crop in many sections, proved disastrous to the quality and yield of tobacco, severely curtailed the production of canning tomatoes, and did considerable damage to miscellaneous truck crops in the State. Growing conditions for other crops were not particularly favorable and there unfortunately appeared to be little or no compensation in the form of higher prices to offset the losses occasioned by decreased production.

The depressing factors in the economic situation were likewise largely of a character to place them beyond the control of Maryland farmers. Undoubtedly the potato crop suffered the most disastrous consequences from unfavorable economic tendencies. In the case of this particular crop there was heavy overproduction in the entire early-producing territory. Maryland growers, however, were less responsible for this condition

than those in some of the other states. Overproduction was likewise a factor in the comparatively poor market for strawberries so that the year for producers of this fruit was far from successful. Most other truck crops, also, seemed to encounter sluggish market conditions with returns to growers considerably below those of 1927.

Crop Yields

With low yields and with prices but little if any higher than in 1927, both corn and wheat, the principal Maryland crops, had lower aggregate farm values in 1928 than in 1927. The corn crop gave an average yield of 36.5 bushels per acre in contrast to a yield of 44 bushels in 1927, and was worth approximately $17,024,000, in contrast to 1927 figures of $18,128,000. Wheat, with a yield that dropped to 16.5 bushels per acre in comparison with a 1927 average of 17.5, had a farm value of $11,106,000 in contrast to a value of $11,669,000 the year before. With the tobacco crop, unfavorable conditions were still more pronounced so that the crop was estimated to have a farm value of but $3,906,000 in 1928 in contrast to $6,020,000 in 1927.

Leading orchard crops were likewise disappointing and while the production of both apples and peaches was larger than in 1927, farm values were either below or but slightly above the previous year's figures as a result of lowered prices.

Dairying, live stock, and poultry, on the other hand, experienced a generally satisfactory year. With the marketing situation well in hand in all the leading distributing centers, dairymen were able to maintain their business on a satisfactory footing. There were some expansions of the industry in new territory, chiefly in Garrett, Somerset, and Worcester Counties. Live stock producers in the main experienced a good year, although some beef-cattle feeders reported inability to show profits in their line, due to the high prices of feeder cattle. The sheep industry forged steadily ahead under a strong market demand for early lambs and reasonable prices for wool. Poultry producers were encouraged by stable prices for both poultry and eggs and a marked increase in turkey production in many sections of the State opened up new sources of income for many farmers.

Viewing the agricultural industry of the State in its entirety, it may be said that the year 1928 brought little in the way of financial encouragement to farmers. Confronted with poor yields and low prices, and, in many cases, with serious crop losses, the majority of farmers have been faced with the necessity for retrenchment.

Under these circumstances, the Extension Service directed its efforts largely to assisting farmers in establishing sound production and marketing practices. It has stressed particularly the importance of low-cost production as the only sure method of counteracting the ill effects of low prices. It has attempted to emphasize the necessity for quality products in meeting the growing competition from other sections, has encouraged the adoption of a more nearly self-sustaining type of agriculture, and has endeavored to promote those particular branches of agriculture which seemed to offer the greatest opportunities for profitable expansion.

Alfalfa Campaign

In line with these efforts, the alfalfa campaign in the Eastern Shore counties of Kent, Caroline, Queen Anne's, Talbot, and Dorchester, proved an outstanding feature of the year's work. Primarily, its purpose was to increase the supply of high-grade, home-grown dairy feeds in a section of the State where dairying has developed rapidly. The campaign, concentrated in the five counties and staged simultaneously in all, proved highly successful in increasing alfalfa acreage, in stimulating interest in improved dairy production and in providing the necessary means for lower-cost milk production.

Smut Campaign Successful

Losses in the wheat crop, due to the prevalence of stinking smut, again called for attention during the year. Good results from the previous year's campaign were evident throughout the State and most farmers were acquainted with the method of treating seed wheat with copper-carbonate dust. A survey of conditions just prior to the harvest season, however, indicated the need for continued control measures. While the intensive campaign of the previous year was not deemed necessary, farmers were acquainted with the situation and advised to treat their seed wheat.

In connection with the production of wheat, and as a possible factor in lowering production costs, it may be pointed out that the combine is being tried on a number of Maryland farms with apparent success. In view of the rapid adoption of this machine in western wheat-growing regions and its possible ultimate effect on production costs, its introduction in Maryland should prove valuable since it will afford an opportunity for farmers to study its possibilities.

While corn production proved disappointing during the year as a result of unfavorable growing weather, interest among growers of good seed corn was maintained and there was sufficient high-quality corn at the close of the season for creditable displays at the International Grain and Hay Show, Chicago, as well as at numerous local shows throughout the State. In all, nineteen premiums were awarded on Maryland corn at the International show, indicating the continued high quality of corn being grown in the State. Outstanding features of the work directed to corn improvement during the year included the introduction and distribution of high-yielding varieties, seed-corn selection and testing demonstrations, and the development of local seed sources.

Ten-Ton Tomato Contest

As a new means of stimulating interest in low-cost production of canning tomatoes, the Extension Service co-operated with the Tri-State Packers' Association and other agencies during the year in the inauguration of a Maryland ten-ton production contest. Attractive prizes were provided for growers securing the best acre yields during the year. Unfortunately, weather conditions proved most unfavorable, and but four of the one hundred and eleven growers entered in the contest were successful in attaining a yield of ten tons or better. The best yield recorded was made by John W. Howard, of Caroline County, who produced an average of 12.52 tons on 2.1 acres. Notwithstanding the poor weather conditions, the growers in the contest produced yields more than double the average for the State. The project was most successful in stressing the important features of good tomato production, and in bringing to attention the essential factors in low-cost production.

Variety tests of tomatoes, the saving of high-quality tomato seed, production of tomato plants in cloth-covered cold-frames and in open seed-beds under approved methods, were other features of the work devoted to the improvement of tomatoes for canning. Considerable work also was directed to improving such other canning crops as sweet corn, peas, and beans.

Progress In Live Stock

Considerable progress in the major branches of the live-stock industry has been in evidence during the year. The most outstanding development, perhaps, has taken place in the sheep industry in which results of previous years' efforts are beginning to show. Probably more early lambs of good quality were shipped from the State during the year than in any previous similar period. This development has been brought about through the introduction of high-grade rams and ewes, and through improved methods of management. For the first time in years, the State was able to occupy a place as an exporter of breeding stock, shipping thirty-two pure-bred rams to Tennessee for use by lamb producers of that State. Other projects during the year designed to promote the sheep industry in the State included a pure-bred ram sale by the Maryland Sheep Growers' Association and a special train operated by the Baltimore and Ohio Railroad in co-operation with the Extension Service, the United States Department of Agriculture, and other agencies.

Demonstrations of baby-beef production in Maryland by 4-H club members in Washington and Frederick Counties again proved successful in stimulating interest in this particular phase of the beef-cattle industry. In Washington County forty-five baby beeves were fed in accordance with the recommendations of the Extension Service and were sold at public auction for $6,448.81. In Frederick County, club members bought and fed eight animals which sold for $1,733.16. The demonstrations, in addition to supplying valuable experience to the club members, were most successful in bringing to the attention of beef-cattle feeders the possibilities of baby-beef production under Maryland conditions.

Dairy Development

In the field of dairying, work during the year has been directed primarily toward improving the quality of milk produced and to lowering production costs through the increased use of suitable home-grown feeds, the elimination of unprofitable cows and the introduction of proven sires. The calf-club work among 4-H club members was productive of satisfactory results. As in former years, it received the encouragement of the Timonium State Fair where splendid prizes were offered both for animals exhibited by club members and for the annual State dairy cattle judging contest. There were expansions in the dairy industry during the year, notably in Garrett, Somerset, and Worcester Counties, where the county agents were able to render effective service. An effort was made to improve the advanced registry service in the State by placing its administration under the Extension Service and securing Mr. H. C. Barker, of Chardon, Ohio, as supervisor of the work.

Certification of Poultry Flocks

Poultry work during the year was featured by advancement of the certification project, in co-operation with the Maryland State Poultry Association, and a marked development in turkey production. Certification of poultry breeding flocks made most satisfactory progress, establishing itself on an increased number of farms. New methods of production, including artificial hatching and brooding, were involved in the turkey project and there were numerous demonstrations to indicate the practicability of the new methods.

Insect-Pest Control

Two serious insect pests came into prominence in Maryland during the year. Several isolated infestations of the Japanese beetle were discovered in the State. Prompt steps were taken to eradicate this pest by the treatment of the infested area with carbon bisulphide. The treatments apparently were entirely successful and the State was saved the inconvenience and expense that otherwise would have resulted had it been included in the Federal quarantine area. The spread of the Mexican bean beetle was most rapid during the past year and

the infestation in many sections was severe. Control measuers were necessary in nearly all parts of the State but were successful where promptly and efficiently carried out.

Progress in Marketing

Among outstanding marketing activities during the year may be mentioned the growth of the shipping-point inspection service. In all, 2,329 cars of fruits and vegetables were inspected for growers and shippers, approximately sixty per cent. of them meeting the necessary requirements for classification as U. S. No. 1 grade. Demands for the service were heaviest in the early potato producing sections where 999 cars were inspected for shippers and growers. Apples provided the next largest number of cars, 595 being inspected during the season. Other products for which the service was provided included 406 cars of strawberries, 152 cars of tomatoes, 112 cars of sweet potatoes, 57 cars of peaches, and eight cars of cucumbers.

An interesting and valuable survey of the Baltimore livestock market was completed during the year by Mr. B. B. Derrick, of the Bureau of Agricultural Economics, United States Department of Agriculture, in co-operation with the Extension Service. The survey gave a comprehensive picture of the Baltimore market, presenting both the favorable and unfavorable conditions from the standpoint of the farmer selling on the market.

Co-operating with local Granges and Farm Bureaus, the Extension Service continued its efforts during the past year to secure a desirable location for the Washington Farmers' Market, a matter of primary importance to three or four hundred Maryland farmers in the vicinity of Washington. While considerable time and effort were consumed in this project, the selection of a desirable site for a permanent market area in Washington is a matter of very great importance to the farmers of Montgomery and Prince George's Counties who sell produce in that city.

Home Work Attracts

Home-demonstration work during the year has been marked by several developments of importance. The work has been

strengthened by the appointment of two district agents who will assist Miss Venia M. Kellar, State home demonstration agent, in the supervision of the agent force. Organization among rural women and girls has made satisfactory progress and there has been a steadily expanding interest in home-improvement projects.

The enrollment at the Rural Women's Short Course totaled 464, the largest yet attained. Both in attendance and in interest the Short Course gave evidence of a real appreciation on the part of the rural women of the State for the opportunities which it affords. A feature of the course was the awarding of Master Farm Homemakers' honors to three rural women for outstanding accomplishments. The awards were made in co-operation with the Farmer's Wife, a national farm woman's magazine.

The Extension Service has worked in harmony and in close co-operation with many agencies during the year. It has undertaken many projects in co-operation with the Farm Bureau and State Grange, has assisted wherever possible the various commodity organizations and has joined forces with other agencies for the advancement of the State's agriculture. The 4-H club work has had the support of the Maryland State Bankers' Association, the Timonium Fair, and individual banks and fairs throughout the State. In work designed to improve the quality and production of canning crops, the Extension Service has had the co-operation of the Tri-State Packers' Association. There has likewise been opportunity for co-operation with the Del-Mar-Va Eastern Shore Association and with the Southern Maryland Immigration Commission. The Extension Service assisted in supplying information for use of the Baltimore Association of Commerce in its efforts to determine the resources of the State and their development possibilities. Co-operation has likewise been extended to the Baltimore and Ohio Railroad in connection with its agricultural development projects.

The National Rural Electric Project, an undertaking designed to demonstrate the possible uses of electric energy on the farm, has been a development during the year in which the Extension Service has co-operated fully.

From the standpoint of the Extension Service and its work, the year has been one of satisfactory progress with every

indication that rural people have a growing understanding of the aims and purposes of the work and a growing appreciation of the service rendered.

As a matter of record, the crop yields of the State have been included in the annual report of the Extension Service for the past nine years. These figures are secured from the Bureau of Agricultural Economics, United States Department of Agriculture, and show production, yield, and values for the past year with comparable figures for previous years. In addition, we are including 1928 figures for live stock.

Production

Crop and Year	Acres	Per Acre	Total	Unit	Per Unit	Total	Value Per Acre
Corn*							
1928	530,000	36.5	19,345,000	Bus.	$.88	$17,024,000	32.12
1927	515,000	44.0	22,660,000	"	.80	18,128,000	35.20
1926	554,000	39.8	22,049,000	"	.64	14,111,000	25.47
Wheat:							
1928	530,000	16.5	8,745,000	"	1.27	11,106,000	20.95
1927	525,000	17.5	9,188,000	"	1.27	11,669,000	22.23
1926	520,000	23.0	11,960,000	"	1.30	15,548,000	29.90
Oats:							
1928	54,000	31.5	1,701,000	"	.56	952,000	17.63
1927	51,000	33.5	1,708,000	"	.54	922,000	18.08
1926	52,000	32.8	1,706,000	"	.50	853,000	16.40
Barley:							
1928	13,000	31.0	403,000	"	.85	342,000	26.31
1927	9,000	30.5	274,000	"	.87	238,000	26.44
1926	10,000	34.3	343,000	"	.80	274,000	27.40
Rye:							
1928	15,000	15.0	225,000	"	1.15	258,000	17.20
1927	14,000	15.3	214,000	"	1.10	235,000	16.79
1926	15,000	18.0	270,000	"	1.05	284,000	18.93
Buckwheat:							
1928	7,000	19.0	133,000	"	.95	126,000	18.00
1927	8,000	22.0	176,000	"	.93	164,000	20.50
1926	8,000	20.2	162,000	"	1.00	162,000	20.25
Potatoes:							
1928	47,000	115.0	5,405,000	"	.50	2,702,000	57.49
1927	43,000	122.0	5,246,000	"	1.05	5,508,000	128.09
1926	39,000	90.0	3,510,000	"	1.40	4,914,000	126.00
Sweet Potatoes:							
1928	10,000	150.0	1,500,000	"	.80	1,200,000	120.00
1927	11,000	144.0	1,584,000	"	.70	1,109,000	100.82
1926	11,000	165.0	1,815,000	"	.75	1,361,000	123.73
Hay (All Tame):							
1928	430,000	1.75	754,000	Tons	13.50	10,179,000	23.67
1927	443,000	1.65	733,000	"	15.40	11,288,000	25.48
1926	396,000	1.30	516,000	"	20.00	10,320,000	26.06

* The figures shown for corn relate to corn for all purposes, including that hogged and siloed; and that cut without removing ears and fed, as well as that corn husked and snapped for grain; the yield for grain being applied to the total corn acreage to obtain an equivalent production figure for all corn.

Production—Continued

Crop and Year	Acres	Per Acre	Total	Unit	Per Unit	Total	Value Per Acre
Tobacco:							
1928	31,000	700.00	21,700,000	Lbs.	18.00	3,906,000	126.00
1927	32,000	818.00	26,176,000	"	23.00	6,020,000	188.12
1926	31,000	840.00	26,040,000	"	23.7	6,171,000	199.06
Apples (Total Crop):							
1928	------	--	2,190,000	Bus.	$.90	$1,971,000	----
1927	------	--	1,700,000	"	1.25	2,125,000	----
1926	------	--	3,500,000	"	.50	1,750,000	----
(Commercial Crop):							
1928	------	--	442,000	Bbls.	2.65	1,171,000	----
1927	------	--	400,000	"	3.70	1,480,000	----
1926	------	--	600,000	"	1.50	900,000	----
Peaches:							
1928	------	--	465,000	Bus.	1.30	604,000	----
1927	------	--	352,000	"	1.50	528,000	----
1926	------	--	700,000	"	.75	525,000	----
Pears:							
1928	------	--	193,000	"	.90	174,000	----
1927	------	--	193,000	"	.90	174,000	----
1926	------	--	394,000	"	.50	217,000	----
Grapes:							
1928	------	--	1,200	Tons	--	--------	----
1927	------	--	1,224	"	50.00	61,000	----
1926	------	--	1,330	"	50.00	36,000	----
Tomatoes (For Mfr.):							
1928	22,710	2.8	63,600	"	14.54	925,000	40.73
1927	34,410	4.4	151,400	"	14.28	2,162,000	62.83
1926	37,000	2.4	88,800	"	13.90	1,234,000	33.35
Sweet Corn (For Mfr.):							
1928	30,800	1.2	37,000	"	13.92	515,000	16.72
1927	27,500	1.8	49,500	"	11.78	583,000	21.20
1926	33,850	2.2	74,500	"	14.08	1,049,000	30.99
Cantaloupes:							
1928	6,040	82.	495,000	Crts.	1.21	599,000	99.17
1927	7,100	125.	888,000	"	2.20	1,954,000	275.21
1926	6,120	163.	998,000	"	1.42	1,417,000	231.53
Strawberries:							
1928	13,800	1,167.	16,105,000	Qts.	.07	1,127,000	81.67
1927	12,780	2,243.	28,666,000	"	.12	3,440,000	269.17
1926	10,650	3,200.	34,080,000	"	.15	5,112,000	480.00

	Number	Value per Head	Total
Horses	97,000	$92.00	$8,943,000
Dairy Cows	187,000	97.00	18,139,000
Mules	28,000	111.00	3,098,000
Beef Animals	96,000	----	4,358,000
Sheep	108,000	11.50	1,245,000
Swine	199,000	10.80	2,140,000

Administration

There have been no changes during the year affecting the administrative policies of the Extension Service. The work has been organized and carried on as in former years.

The return of Dr. F. B. Bomberger, assistant director, to his duties following a year's leave of absence, has strengthened the adminstrative and supervisory forces of the Service. Dr. Bomberger likewise resumed his duties as chief of the State Department of Markets and marketing specialist for the service.

We have also been able to retain the services of District Agent E. I. Oswald, who is devoting his whole time to the supervision of the agency force, which, supplemented by the assistant director and director, should enable the Service for the first time to be able to give adequate supervision to program erection and prosecution in the several counties of the State.

A splendid spirit of co-operation exists among all workers in the Service and relationships with other divisions of the institutions and the State Department of Public Instruction are most agreeable and satisfactory. Plans are now under way for entering into co-operative agreement with the vocational forces in the State in accordance with the National memorandum that has recently been proposed. We have received splendid co-operation from vocational teachers in all counties and also from the State administration of vocational work.

The attitude of the farm organization in the State to the work of the Service has been sympathetic and co-operative. All forces are working together in harmony for the upbuilding of organization consciousness among our farm people. Many mutual problems are presented and it is hoped that our State organizations may be able to augment their membership during the coming year.

Fewer changes have been made in the County and Home Demonstration forces during the year than heretofore. In fact, the turnover has been 13 per cent. among the County Agents and 10 per cent. among the Home Demonstration Agents.

The Extension Service is receiving unusual co-operation from the Boards of County Commissioners in the several counties. Several increases have been made during the past year and a good spirit exists toward the work in all of the counties.

Sources of Extension Revenue

During the fiscal year ending June 30, 1928, there were available for Extension Work the following funds: Federal Smith-Lever, $56,287.11; State Smith--Lever, $46,287.11; U. S. Department of Agriculture (regular), $17,400.00; U. S. Department of Agriculture (Clarke-McNary Bill), $1,980.00; Federal Smith-Lever Supplementary, $14,676.40; County Demonstration Fund, $56,047.79; State Funds for General Extension, $16,135.77; State Horticultural Fund, $12,147.45; Marketing Extension Fund, $8,185.35; Canning Extension Fund, $6,-183.69; Insect Control Fund, $8,459.53; and $60,378.84 contributed by the various counties; or a total of $305,368.84.

During the present fiscal year ending June 30, 1929, there are available: Federal Smith-Lever, $56,287.11; State Smith-Lever, $46,287.11; U. S. Department of Agriculture (regular), $17,400.00; U. S. Department of Agriculture (Clarke-McNary Bill), $1,980.00; Federal Smith-Lever Supplementary, $17,-781.38; County Demonstration Fund, $60,000.00; State Funds for General Extension, $15,000.00; State Horticultural Fund, $12,560.00; Marketing Extension Fund, $10,000.00; Canning Extension Fund, $10,000.00; Insect Control Fund, $10,000.00; and $61,000.00 contributed by the various counties; or a total of $318,295.60.

Capper-Ketcham Act

As previously mentioned, a new Federal law, known as the above, was approved May 22, 1928, providing for the further development of agricultural extension work by the Government in co-operation with State Land Grant institutions. The purpose of this act was to provide additional funds for strengthening home economic work and boys' and girls' club work as well as to man with county agents the counties that were not so provided. In this State the funds have been used in promoting club work and placing home demonstration agents in the three counties that did not have agents. Some restrictions surrounding the law have handicapped the work to some extent in Maryland, but it is hoped that conditions may be so adjusted as to utilize these funds for increasing the efficiency of our work in all its activities. The following is the text of the law:

The Capper-Ketcham Act

Approved May 22, 1928

To provide for the further development of agricultural extension work between the agricultural colleges in the several States receiving the benefits of the Act entitled, "An Act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," approved July 2, 1862, and all Acts supplementary thereto, and the United States Department of Agriculture.

SECTION 1. Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, That in order to further develop the coöperative extension system as inaugurated under the Act entitled "An Act to provide for coöperative agricultural extension work between the agricultural colleges in the several States receiving the benefits of the Act of Congress approved July 2, 1862, and all Acts supplementary thereto, and the United States Department of Agriculture," approved May 8, 1914, there is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, for the purpose of paying the expenses of the coöperative extension work in agriculture and home economics, and the necessary printing and distributing of information in connection with the same, the sum of $980,000 for each year, $20,000 of which shall be paid annually, in the manner hereinafter provided, to each State and the Territory of Hawaii, which shall by action of its legislature assent to the provisions of this Act. The payment of such installments of the appropriations hereinbefore made as shall become due to any State or Territory before the adjournment of the regular session of the legislature meeting next after the passage of this Act may, in the absence of prior legislative assent, be made upon the assent of the governor thereof, duly certified to the Secretary of the Treasury. There is hereby authorized to be appropriated for the fiscal year following that in which the foregoing appropriation first becomes available, and for each year thereafter, the sum of $500,000. The additional sums appropriated under the provisions of this Act shall be subject to the same conditions and limitations as the additional sums appropriated under such Act of May 8, 1914, except that (1) at least 80 per centum of all the appropriations under this Act shall be utilized for the payment of salaries of extension agents in counties of the several States to further develop the coöperative extension systems in agriculture and home economics with men, women, boys and girls; (2) funds available to the several States and the Territory of Hawaii under the terms of this Act shall be so expended that the extension agents appointed under its provisions shall be men and women in fair and just proportions; (3) the restriction on the use of these funds for the promotion of agricultural trains shall not apply.

SECTION 2. The sums appropriated under the provisions of this Act shall be in addition to, and not in substitution for, sums appropriated under such Act of May 8, 1914, or sums otherwise annually appropriated for coöperative agricultural extension work.

Changes in Personnel

The following changes in personnel have taken place during the year:

Dr. F. B. Bomberger returned to the Service September 16, 1928, as assistant director of Extension and chief of the Maryland State Department of Markets, after an extended leave of absence.

Miss Edythe M. Turner transferred November 1, 1928, from county home demonstration agent in Baltimore County to district home demonstration agent.

Mr. H. C. Barker appointed February 6, 1928, as dairy specialist in advanced registry testing work.

Mr. O. R. Carrington appointed June 11, 1928, as publicity assistant.

Mr. P. A. Raper appointed October 3, 1928, as assistant in poultry certification work.

Mr. Wm. T. Henerey appointed April 16, 1928, as part-time assistant in insect control work.

Mr. Castillo Graham appointed March 17, 1928, as part-time assistant in entomology.

Dr. E. C. Auchter resigned November 30, 1928, as part-time horticulturist.

Mr. W. B. Posey appointed March 1, 1928, as tobacco specialist in addition to his regular duties as county agent in Prince George's County.

Miss Curry Nourse appointed July 1, 1928, as temporary assistant club specialist, and resigned September 15, 1928.

Mr. John W. Magruder appointed April 16, 1928, as county agent in Howard County to succeed Mr. Miles H. Fairbank, who resigned March 31, 1928.

Mr. Albert A. Ady appointed July 18, 1928, as assistant county agent in Montgomery County.

Mr. Perry E. Clark appointed March 1, 1928, as assistant county agent in Prince George's County.

Mr. J. Z. Miller appointed October 1, 1928, as assistant county agent in Kent County.

Mrs. Georgiana Linthicum returned September 1, 1928, to Anne Arundel County as county home demonstration agent, after an extended leave of absence.

Miss Ardath Martin appointed January 5, 1928, as county home demonstration agent in Washington County to succeed Mrs. Lillian G. Fraser, who resigned January 14, 1928, as temporary county home demonstration agent.

Miss Florence H. Mason transferred October 1, 1928, from county home demonstration agent in Wicomico County to district county home demonstration agent in Calvert, Queen Anne's, and Somerset Counties.

Equipment

No special additions to equipment of the Service have been purchased during the past year except necessary office facilities, including typewriters, transfer cases and other similar office equipment. It has been our hope to have sufficient funds to enable our specialists to prepare a number of charts, but this has not been feasible. Several pieces of exhibits have been prepared for county fairs and community shows. Special arrangements have been made in co-operation with the Department for the taking of a number of photographs for development of slides for carrying on specialist work.

Increasing Efficiency of Workers

Regular monthly conferences of specialists are held at headquarters and monthly group conferences of agents are held in the field for the purpose of discussing programs of work and emphasizing special campaigns such as the alfalfa campaign conducted by five county agents on the Eastern Shore. The group meetings seemed to be quite an inspiration to the agents as it affords an opportunity for them to discuss intimately their many problems. The district agent arranges to attend as many of these as possible.

Special efforts were directed during this year's conference to improving the presentation of Extension Work on the part of all members of the Service, emphasis being placed upon public speaking. The conference was quite a success and it is believed that greater emphasis should be placed upon this phase of work by all educators in all lines of work.

Records of Office Work

Some difficulty is experienced in retaining efficient office force with available funds. Miss K. G. Connolly, administrative assistant and chief clerk, supervises the office force and financial records. It is believed that we should put more money into this necessary aspect of Extension activity.

During the year a total of 53,731 first-class letters have been mailed from headquarters while the total pieces of mail numbered 103,246. In all, 254,953 first-class letters and pieces of mail were sent out by the Extension Service throughout the State.

In closing this discussion of the administration project I am pleased to express my appreciation to the members of the Service for their cordial support and especially for the able assistance rendered by Miss V. M. Kellar, Mr. E. I. Oswald, and Dr. F. B. Bomberger, who returned to the Service this fall.

PUBLICATIONS

M. D. Bowers, Specialist
O. R. Carrington, Assistant

Publications issued by the Extension Service during the year have included bulletins, circulars, information cards, the Extension Service News, and miscellaneous printed and mimeo-

graphed material. In addition a weekly Information Service embodying material designed for the press of the State has been maintained.

The work has been in charge of Mr. M. D. Bowers, assisted during the latter part of the year by Mr. O. R. Carrington.

Bulletins issued during the year were limited in number and more attention was devoted to the preparation of brief informative material which was published in circular form. The small circular, approximately four inches by nine inches in size, seemed popular and was the form most often employed. The Extension Service News was continued as a regular monthly publication, being distributed to a list of approximately four thousand farmers. Information cards were issued for special purposes as occasion justified.

The Information Service was continued in line with the policy of the previous year, all releases intended for the press of the State being sent to county agents for adaptation and use in their particular counties. There were 187 news releases prepared and forwarded in this manner during the year. In addition special articles were prepared for farm papers and other publications from time to time and there were special releases prepared for special events such as the Poultry Train, Sheep Train, Rural Women's Short Course, Club Week, Farmers' Day, etc.

Photographs of Extension Service work were secured again during the year in co-operation with Mr. Reuben Brigham, Visual Instruction and Editorial Section, Office of Co-operative Extension Work, United States Department of Agriculture. A somewhat different method was followed during the year, definite photographic schedules being worked out with five specialists, in effort to secure a comprehensive set of pictures of some particular phase of Extension Work. The idea in mind was for each specialist to utilize the pictures for slides and illustrative material in connection with this work. Results were very satisfactory and five very valuable series of photographs illustrative of Extension Work were secured.

Radio broadcasting from WRC, Washington, in co-operation with the Radio Division of the United States Department of Agriculture, was continued during the year and a weekly program from Station WMAL also was presented, members of the staff and faculty of the University delivering the talks.

The following publications have been issued by the Extension Service during the past year: Bulletin 42, "Windbreaks and Shelter Belts," 36 pages, 2,000 copies; Bulletin 43, "When Patterns Do Not Fit," 12 pages, 7,000 copies; Bulletin 44, "More Tomatoes From Fewer Acres," 24 pages, 3,000 copies; Circular 62, "Cattle Grubs or Ox Warbles," 8 pages, 3,000 copies; Information Card 17, "The Chrysanthemum Gall Midge," 2 pages, 2,000 copies; Information Card 18, "Apple Sprays for Maryland," 4 pages, 3,000 copies; Information Card 19, "Peach Spray Program for Maryland," 4 pages, 3,000 copies; Information Card 20, "The Japanese Beetle," 4 pages, 3,000 copies; Thirteenth Annual Report, 88 pages, 2,000 copies; Extension Service News issued monthly with 4 pages and 4,000 copies each month.

Projects

The work of the Service is conducted under regular projects by specialists and agents. All projects are planned in advance and approved by the Extension Service, U. S. Department of Agriculture.

COUNTY DEMONSTRATION WORK

E. I. Oswald, District Agent

As in the past, all of the county demonstration work has been conducted under regular projects by the county agents and specialists as outlined by the Extension Service of the University of Maryland and the U. S. D. A. Demonstration work has been conducted in all of the 23 counties of Maryland, continuing a record, covering the past ten years, of which the State is proud. During the year, assistants have been added in four of the counties making a total of five counties with assistant agents in addition to the regular agent. The assistants devote a large amount of their time to boys' club activities.

Home demonstration agents are employed in 20 of the 23 counties of Maryland. The work in the other three counties is conducted by two district home demonstration agents who devote a portion of their time to the work in these counties. One assistant home demonstration agent is employed.

Work with the colored people is conducted in southern sections of the State by two local men agents, one working in two of the southern Eastern Shore counties and the other in Southern Maryland.

Inasmuch as Maryland counties are widely varied, it is difficult to plan a program of work to meet the demands of the entire State. The district agent and the subject-matter specialists working with the county agents have endeavored to plan their work to meet the needs of the State as well as of the several counties and rural communities.

County Program of Work

Working in co-operation with the farmers' organizations in the various counties, the agents have established definite programs. Where the Farm Bureau and the Grange exist as the county farm organization, the program is arranged jointly with these organizations so as to carry the work into all the communities. In counties where no such organizations exist, the county agent co-operates with a Farmers' Federation made up of community clubs, and through this medium is able to carry his Extension work into all of the communities. In several of the counties, the county agents have conducted a co-operative program of Extension work through the medium of commodity organizations.

Campaigns

The smut situation with the wheat crop was so generally spread throughout the State that a State campaign was conducted with method demonstrations in seed treating in nearly all the counties. The campaign was also instrumental in enlisting the support of grain dealers and millers to the extent of providing large machines for the treatment of smut.

Another outstanding feature of the State program was the alfalfa campaign which was conducted in five of the Eastern Shore counties as the "Five-County Alfalfa Campaign" with the slogan "Milk Flows Where Alfalfa Grows" and goal of "One thousand more acres of alfalfa per county." This campaign was systematically organized by the district agent and conducted by the county agents.

The alfalfa campaign led to a systematic campaign of soil sampling not only in the alfalfa counties but in other counties of the State, which provided for the sampling of soil of thousands of acres of Maryland land to determine the degree of acidity which existed. Thousands of farmers were benefited through this medium and the county agents were able to advise their farmers as to a more intelligent use of agricultural limes.

The seed-potato certification program as carried on for the past four years was continued particularly in three of the counties. This project has been unusually successful and has been the means of encouraging growers to produce higher-quality certified seed from pedigreed stock.

During the past year, certified seed work has been continued in the sweet potato growing sections and growers applying for certification have grown many bushels of certified seed.

The dairy industry in the State has grown so rapidly in the past few years that dairy projects have been necessary in practically all of the counties. These projects were widely varied in nature. 4-H club work has played a very important part in the dairy industry by encouraging the use of pure-bred sires and dams, and by promoting knowledge of dairy cattle through dairy-judging contests.

The beef-cattle industry has been promoted by the Extension Service through feeding demonstrations in practically all of the cattle-feeding districts. A baby-beef club project conducted in two of the Western Maryland counties was most successful.

Poultry demonstrations have been emphasized in practically all of the counties of the State. The State plan for the certification of poultry flocks has proven quite satisfactory and the work is increasing rapidly. Poultry-judging teams have been trained by a number of the county agents and poultry specialists to compete in County, State, and National contests.

A poultry special was run by the B. & O. Railroad in cooperation with the Extension Service, stopping at important centers throughout the State.

The sheep industry throughout the State has been helped very largely through the medium of docking and castrating demonstrations. Production of early lambs for market has

been encouraged. Two ram sales have been held and a special sheep train was run over the B. & O. Railroad in co-operation with the Extension Service.

Work in swine production centered in special efforts to minimize the mortality from hog cholera, the "150-day—1500-pound litter" contest and green-pasture management demonstrations versus dry-lot management demonstrations.

The orchardists throughout the State were assisted through the medium of orchard management, fertilizer, pruning demonstrations and through the spray service which provided timely information in the use of the sprays and dusts to control diseases and insect pests.

Particular emphasis was placed during the past year on the canning-crop problems of the State. A ten-ton tomato project was launched and proved rather successful in an effort to increase the quality of the product rather than the quantity grown. Demonstrations were conducted in the sweet-corn-growing counties. Pea growers and bean growers were assisted through the medium of demonstration work in the control of pea diseases and the ravages of the Mexican bean beetle.

In counties where cantaloupes and cucumbers are grown extensively, spray and dusting demonstrations were conducted to control the various diseases to which these crops were subjected.

Farm woodlot owners and timber operators were assisted through the woodlot management demonstrations. A persistent effort is being made to encourage the re-forestation of cut-over and abandoned lands.

As usual, a concerted effort was made by the county agents in all of the counties to encourage the use of better seed corn and to reduce losses from root rot. Community exhibits and corn shows have been successfully held in all sections.

Tobacco-growing demonstrations have been conducted in the five Southern Maryland counties with special emphasis on the proper fertilization of the crop and the control of wildfire and other fungus diseases. Seed-bed demonstrations have been used as a means to this end.

Farm-engineering projects have been designed to encourage the use of better farm machinery, construction of permanent farm improvements, such as milk-cooling tanks and watering troughs, and installation of farm water systems. Construction of septic tanks was also demonstrated in some communities.

As usual, 4-H club activities were important features of the county work. Clubs were organized by the agents in all of the counties and many successful demonstrations were conducted, Junior judging teams were trained, and many 4-H exhibits were staged at county and state fairs.

County and community projects were emphasized in all of the counties. Regular monthly meetings were held in most local communities and agricultural programs were conducted under the supervision of the county agents. The development of local leaders through this medium is an important factor and in many communities, outstanding leaders are being developed.

Motion pictures and lantern slides furnished by the Extension Service, by the Department of Agriculture and other agencies were used for illustrated lectures. Field meetings and tours were also features of the county and local programs.

Co-operating with the Department of Farm Management, U. S. D. A., special work was undertaken by agents in two of the counties in a Farm Management Program. Farm accounts and rather complete records are being kept. One Farm Account School was held.

Below is given a brief statistical summary of the agents' work:

Number of farm visits made in conducting Extension work	17,536
Number of calls on agents for assistance	46,712
Number of individual letters written	50,180
Number of demonstration meetings held	1,368
Number of people who attended demonstration meetings	29,530
Number of other coöperative educational meetings held	1,930
Number in attendance at these meetings	216,224
Number of training meetings held for local leaders	29
Number in attendance at these meetings	249
Number of Extension Schools and Short Courses held	48
Number in attendance at these Extension Schools and Courses	1,746

COUNTY DEMONSTRATION AGENTS

The following agents are employed in the respective counties at this date:

County	*Name*	*Headquarters*
Allegany	R. F. McHENRY	Cumberland
Anne Arundel	S. E. DAY	Annapolis
Baltimore	H. B. DERRICK	Towson
Calvert	JOHN B. MORSELL	Prince Frederick
Caroline	T. D. HOLDER	Denton
Carroll	L. C. BURNS	Westminster
Cecil	T. H. BARTILSON	Elkton
Charles	GEORGE R. STUNTZ	La Plata
Dorchester	WM. R. McKNIGHT	Cambridge
Frederick	H. R. SHOEMAKER	Frederick
Garrett	JOHN H. CARTER	Oakland
Harford	H. M. CARROLL	Bel Air
Howard	J. W. MAGRUDER	Ellicott City
Kent	J. D. McVEAN	Chestertown
Montgomery	O. W. ANDERSON	Rockville
Prince George's	W. B. POSEY	Upper Marlboro
Queen Anne's	E. W. GRUBB	Centerville
St. Mary's	G. F. WATHEN	Loveville
Somerset	C. Z. KELLER	Princess Anne
Talbot	R. S. BROWN	Easton
Washington	M. D. MOORE	Hagerstown
Wicomico	J. P. BROWN	Salisbury
Worcester	R. T. GRANT	Snow Hill

Assistant County Agents

Harford	W. H. EVANS	Bel Air
Kent	J. Z. MILLER	Chestertown
Montgomery	A. A. ADY	Rockville
Prince George's	PERRY E. CLARK	Upper Marlboro

Local Agents

Southern Maryland	J. F. ARMSTRONG (Col.)	Seat Pleasant
Eastern Shore	L. H. MARTIN (Col.)	Princess Anne

NEGRO WORK

Commendable progress has been made by the two local agents among negro farmers on the Eastern Shore and in Southern Maryland. These local agents have handled their work by communities and have incorporated in their programs of work projects of local interest to men, women, boys, and girls. A creditable Boys' and Girls' Club Week was held in Princess Anne in co-operation with the Eastern Branch of the University of Maryland. Demonstrations planned and carried through by the local agents were practical in nature and aimed to en-

courage the production of better corn, wheat, potatoes, tomatoes, tobacco, poultry, and live stock and to promote better living conditions. It is hoped to extend negro work during the coming year by placing a local home demonstration agent in Southern Maryland to conduct work with the negro women and girls. County agents in a number of the territories where local agents do not function, have assisted colored farmers in solving many of their agricultural problems.

HOME DEMONSTRATION WORK

Miss Venia M. Kellar, State Home Demonstration Agent

Each year marks new growth and a greater appreciation of the value of home demonstration work among the rural people of Maryland. Nineteen twenty-eight has been a banner year for increased interest in Extension work and in securing reports of results obtained in project work done by women and girls. Most of the counties carried but one project for the year, doing follow-up work from 1927 project when time permitted.

The home-management project including the installing of water systems, the change in kitchen plans and time schedules met with popular favor, for farm families are thinking in terms of more conveniences than ever before. In one county the want, solution, action, and satisfaction plan was used to launch the project by which more than 300 new homes were reached—95 of which made actual contacts with the agent, securing help and advice with some household-management problem.

The best plan of reaching the largest number of homemakers is through organized groups. This method enables the home demonstration agent to give help to a greater number of rural homes. The women like to meet in groups not alone for the social contacts, but interest becomes keener when they learn what other women are doing; another advantage is that group activities develop leadership which is greatly needed among farm people.

Community Activities

Community programs of work change each year to meet the new activities and interest of the community.

The county Extension agents as well as the State staff are constantly analyzing community needs by questionnaires and surveys and then in conference with the leaders plan a program that will be of community interest and help. A good community program is one that will get all organizations working together on a program for the betterment of the community.

Achievement Days

Thirty-five achievement days were held in 17 counties with programs and reports planned to mark a certain milestone reached in whatever project the homemakers had carried for the year. Such a program offers a fine opportunity to check results and determine further progress. In a number of counties exhibits were placed by agents and clubs to emphasize some phase of the project, stunts, playlets, and music by the women all having a part in making up the program.

Two counties had county tours in place of achievement days. In each county homes were visited that had entered the kitchen contest. It gave the people in attendance an opportunity to see and note changes with added conveniences made by installing lighting, water systems, building of cupboards, placing new windows for light, etc.

Annual Rural Women's Short Course

The sixth annual Rural Women's Short Course was held June 18 to 23. Four hundred and seventy-six women from 21 counties registered for the course. Twenty-three women were day students and 453 registered for full-time, living in dormitories on the campus and in five of the fraternity houses adjoining the campus. On visitors' day there was a registration of 137, making a total of 613 attending.

This course offers to the farm woman an opportunity for a small registration fee to spend a week on the campus of her State University where lectures and demonstrations are held each day on subjects that are of interest to her as a homemaker. In addition to regular class work, time is given for recreation and a social program which adds both to the interest and life of the women in attendance.

The women who are sent as representatives from their clubs are expected to give, after their return home, two demonstrations that they have observed. This requirement creates greater interest and helps to develop leadership.

Instruction is given each year in foods and nutrition, clothing, health, household management, house furnishing, millinery, landscape gardening, parliamentary law, citizenship, music, story-telling, poultry, and home dairying.

Landscape Gardening and Yard Improvement Contest

Two hundred and seven women entered the Yard-Improvement Contest. This contest extends over a period of two years. Each contestant makes three reports of the project. The first report is to be made through pictures, sketches, and a written statement of condition of home grounds at the beginning of contest, as well as a statement of the changes to be made. The second report indicates progress at the end of first season. The third report at the end of the contest is to show improvement accomplished. Contestants have been furnished monthly information by the State Landscape Gardening Specialist.

Projects

Clothing and Home Furnishing
Miss Helen Shelby, Specialist

The emphasis in the clothing project has been put upon helping women to realize the importance of dress in relation to health and happiness, to understand its rightful place in the budget and how to secure more satisfactory clothing whether made at home or bought ready made. The project was planned with definite goals for individuals and for organizations. Demonstrations were given on how to make patterns and dresses that fit, how to judge materials and ready-to-wear.

The most outstanding feature of the project was a contest in making dresses that cost not more than $2.00. One thousand forty-four women from 10 counties entered this contest: the average cost of these dresses was approximately $1.70. Fifty-eight of the winning dresses were worn in a Dress Revue during the Rural Women's Short Course.

The reports of the home demonstration agents show that:

10 counties gave five or more months to the project.
533 demonstrations were given with an attendance of 7,097.
1,373 guide patterns were made in the interest of securing better fitting garments.
5,859 dresses were made from these patterns.
396 women have assisted in giving demonstrations.
1,967 women outside of clubs have received instructions.

The reports from the women in the 10 counties taking the clothing project show that a large number of garments are being made in the home. The quality of the finished product is higher because of the extension clothing projects.

The number of garments reported is as follows:

11,850 new dresses.
3,395 made over dresses.
449 new coats.
288 made over coats.
515 new hats.
235 made over hats.
3,864 new undergarments.
864 made over undergarments.

In three counties 101 demonstrations were given in the interest of home furnishing. As a result of these, 221 women report greater satisfaction in arrangement of furniture, 147 in selection and hanging of pictures, 133 in selection of paint and wall paper, and 95 in decoration of windows.

Kits of illustrative material in clothing, home furnishings, and home management were prepared by specialists to be used by agents in their project work.

Nutrition and Home Management

Miss Margaret McPheeters, Specialist

One major project in home management with follow-up work in foods and nutrition has been considered this year. The objective has been to promote interest in raising the standards of living through more efficient kitchens and methods of work in the home.

A State-wide kitchen improvement contest has been carried on in connection with the project, the home demonstration agent and specialist visiting the individual kitchens and giving suggestions to more than 130 home-makers. The kitchens were scored before and after the six months' contest. The winning kitchen where the greatest improvements were made

is located in Dorchester County. At the end of the contest some of the counties conducted a kitchen tour, visiting several of the improved kitchens. This brought before the women more forcibly than ever the many changes and little conveniences that can be had in the kitchen with good planning at small expense and work.

A State-wide team demonstration contest of a fatigue study was a means of bringing before the public certain phases of the project in a very forceful way. The fatigue study—testing the saving of time, steps and energy by means of efficient working tools, conveniently arranged kitchen and good organization of work—shows how it was possible to save 506 steps in performing one simple household task—the making of a simple salad. The winning team, Washington County, gave the demonstration at the Rural Women's Short Course in June at College Park.

A rather large number of pictures have been taken by the U. S. Department of Agriculture of Maryland kitchens before and after improvements, and of normal and mal-nourished children to be used for lantern slide talks and bulletins.

Educational window displays in the various stores and exhibits, at fairs and other community gatherings have been taken advantage of in bringing certain phases of the project before the public and have resulted in splendid co-operation with the business firms as well as reaching more people.

The need of reaching more people has resulted in carrying the project out in a somewhat different way in one county (Carroll). A period of six weeks to two months was taken to launch the project, find out the needs and create interest by intensive publicity, as surveys, news articles, letters, and so forth, before starting the project. As a result 300 more women in the county received help through news letters, mimeographed and printed material, while about 50 more women attended the meetings. The interest was more intensive among those already club members as well as those who were not club members.

Some of the outstanding improvements are as follows:

Brighter and more attractive kitchens by means of extra windows and lighter wall and floor coverings; electricity, gas, and running water installed in a number of kitchens; large

equipment arranged into work centers, as near together as possible, with utensils and supplies brought near the place where used; better choice of utensils and more labor-saving devices and the unnecessary equipment discarded; breakfast nooks and rest corners added to the larger kitchens; small windows above sink or work table for better light and pleasing view, artificial lights near work centers; several back porches made into kitchens.

Table showing results of outstanding improvements: (Results of only 14 of the 16 counties.)

Number of counties taking project	16
Number of women enrolled	3,724
Number of individuals following organized plan of work for first time	612
Number of homes obtaining labor-saving devices	1,579
Number of kitchens with equipment rearranged for more efficient work	1,046
Number of homes checking financial leaks for first time	96
Number of homes adopting improved practices	1,753
Number of club members spreading influence	836
Number of individuals (beside club members) helped by the influences	1,470
Other improvements not listed above	3,315
Total number of improvements, time, steps, and money-saving equipment	6,648

Result of follow-up work in foods and nutrition reported by 11 counties (reports not complete in other counties):

Number of improved practices in food preparation	1,523
Number of improved practices in nutrition	1,418

Amount of food preserved this year reported from 10 counties (reports not complete in other counties):

Number of quarts of fruit and vegetables canned	93,662
Number of quarts of meat canned	6,666
Number of quarts of jelly and preserves	35,871
Number of quarts of pickles and relishes	11,433
Number of pounds, dried fruit and vegetables	2,273
Number of pounds, cured meat	39,350
Total number of quarts of food canned	147,632
Total number of pounds of food dried or cured	41,623
Number of homes which have increased the amount of food preserved	810

Home-makers' Markets

Two markets sponsored by home-makers were opened in Caroline County and Prince George's County. Canned products and home baked goods are featured at each market.

News Letters

Agents in nine counties have sent regular monthly news letters to all club women and others on mailing list. Part of the news for these letters is furnished by the club publicity chairman. The letters contain club news, county Extension news, notice of office demonstrations, club meetings and helpful suggestions on the county project of work.

Summary

Number of home-makers' clubs	227
Enrollment	5,629
Number of counties having county councils	12
Number of achievement days	39
Number of women attending Short Course	613
(Full time 476)	
(Visitors 137)	
Number of women receiving certificates at Short Course	54

Home Demonstration Agents

Following is a list of home demonstration agents at present employed by the Extension Service:

County	*Name of Agent*	*Address*
Allegany	MAUDE A. BEAN	Cumberland
Anne Arundel	MRS. G. LINTHICUM	Annapolis
Baltimore	RUTH NESBITT	Towson
Calvert		Prince Frederick
Caroline	BESSIE SPAFFORD	Denton
Carroll	AGNES SLINDEE	Westminster
Cecil	PRISCILLA PANCOAST	Elkton
Charles	ULA FAY	La Plata
Dorchester	HATTIE BROOKS	Cambridge
Frederick	HELEN PEARSON	Frederick
Garrett	ELSIE M. BENTHIEN	Oakland
Harford	CATHERINE MAURICE	Bel Air
Howard	VIDA METZGER	Ellicott City
Kent	HELEN SCHELLINGER	Chestertown
Montgomery	BLANCHE CORWIN	Rockville
Prince George's	ETHEL REGAN	Hyattsville
Queen Anne's		Centerville
St. Mary's	ETHEL JOY	Leonardtown
Somerset		Princess Anne
Talbot	OLIVE K. WALLS	Easton
Washington	ARDATH MARTIN	Hagerstown
Wicomico	MARION SWANSON	Salisbury
Worcester	LUCY WALTER	Snow Hill

Assistant Home Demonstration Agents

Frederick	KATHERINE BAKER	Frederick

Following is a summary of home demonstration work for the year, as reported by the county home demonstration agents:

Number of home visits made in conducting Extension work	4,735
Number of calls on agents for assistance:	
Office	4,570
Telephone	11,784
Number of individual letters written	29,449
Number of demonstration meetings held	3,548
Number of people attending demonstration meetings	48,460
Number of other coöperative educational meetings held	1,232
Number in attendance at these meetings	107,034
Number of training meetings held for local leaders	102
Number in attendance at these meetings	653
Number of Extension Schools and short courses held	25
Number in attendance at these Extension schools and courses	1,050

Girls' Club Work

Miss Dorothy Emerson, Girls' Club Agent

The club girls in Maryland have made worth-while achievements particularly in their clothing and canning programs. The standard of their work has proved itself in public exhibits both in State and National contests.

The training for local leaders has been continued through conferences and by means of local leader newsletters. It is gratifying to find many older club girls continuing their club work as local leaders of younger groups. One county held monthly conferences for its Junior leaders. Five counties made a special point of including leadership training for older girls at their summer camps. A training course is also offered at the State Club Week for local leaders.

Demonstration team work has progressed in a satisfactory manner. Practically every county (and in some cases every community) has had its demonstration team.

There have been more public achievement meetings held this year—both in communities and as county-wide rallies. The programs have been better, the exhibits more educational and of a higher standard in every way.

The Home Demonstration Department is looking forward to another year of worthwhile achievements for the 4-H girls in their home-making demonstrations.

Summary of Achievements

National 4-H Club Congress 1928.
Canning:

Hazel Atlas	Maryland		First	$100.00
Hazel Atlas	Individual	Jars	First	87.00
Meats	Maryland		First	10.00
Vegetables	Maryland		Fourth	4.00
Children's garments	Maryland		Second	12.00
Window treatment	Maryland		Third	6.00

Jane Wine of Maryland attended the Congress.

Camp Vail and Leaders' Training School, Springfield, Mass.
Eight girls attended the exhibition.
All placed in the Inter-State judging contest.
All assisted with management of Fried Chicken Booth.

National 4-H Club Camp.
Two girls attended in 1928.
Farm Journal 4-H Leadership Contest:
Erna Riedel placed among the highest ten after the first three $10.00.

1928 Statistics

Girls enrolled	2,885
Number garments made	9,759
Number jars fruit and vegetables	16,148
Number girls active club members (4 or more years)	302
Number local leaders	168
Number demonstration teams trained	130
Number girls attending four county camps	208
Number girls attending Club Week	278

4-H Club Work

E. G. Jenkins, State Boys' Club Agent

Four-H club work has made commendable progress in the State during the past year. Due to the demands of adult farmers in most of the counties of the State, the time of the county agent has been so wholly taken up that he has not been able to spend as much time on club work as we would desire. With the passage of the Capper-Ketcham bill, appropriating additional Federal funds for extension work, emphasis will be placed upon the securing of competent assistant county agents for the primary purpose of promoting club work. Two assistants were put on the force July first, but naturally the development of club work this year was practically unaffected by this legislation. It is hoped that several assistants will be put on during the coming year and that a substantial increase in club members and work done will be registered in

1929. Splendid co-operation has been given club activities by all agencies in the state, including the state, county, and local bankers and bankers' associations, farm boards, Granges, farm bureaus, railroad officials, newspapers, and others.

Enrollment in boys' club projects in 1928 was 2,380 as compared with 2,290 in 1927. Many other boys were reached at club meetings and in the field who did not actually undertake stated projects.

Poultry with 699 demonstrations and dairy with 492 lead the list, swine projects following closely with 446.

Perhaps the most significant development in project work was the starting of dairy clubs in Talbot and Somerset Counties, each with 16 members.

Exhibition of boys' club live stock increased in quantity and quality this year. Somerset and Talbot Counties not only exhibited club calves locally for the first time, but in the State contests they made the finest showing. Club exhibits of live stock were made in 16 of the 23 counties and in five of these no adult live-stock exhibits were made. This indicates the important demonstration feature of junior work in many sections of the State.

Besides the excellent exhibits of Somerset and Talbot Counties, the local showing of Baltimore, Frederick, Harford, Kent, Montgomery, and Washington Counties brought most favorable comment.

There were 112 club dairy animals exhibited at Timonium Fair, 96 in club classes and more than a score in open classes. A group of Jersey club calves started on a circuit which was to have culminated at the National Dairy Exposition in Memphis, but illness in the herd required their return after successful showing at several fairs.

Excellent swine have been exhibited by club members; and George Oland, a club member from Montgomery County, for the second time won the State 150 day-and-ton litter contests against all breeders.

Forty-seven beef calves were brought into the State and fattened by club boys in two counties. One died. Thirty-six were sold at auction at the Hagerstown Fair for $6,448.81, an average of $16.45 per cwt., and eight at Frederick County Fair for $1,733.16.

The study of dairy cattle went forward in most counties. There were inter-county tours and contests involving the dairy club members of 12 counties and these counties had judging teams in the State contest, Kent winning first place. The State team won ninth place in the National contest. Nearly all of the active dairy demonstrators had some field study of types and some judging experience and instruction.

Much the same policy is being advised for poultry club work. Studies were made, and good flocks were inspected by club members of nine counties. Six local judging contests were held, and at the State contest held in connection with the Hagerstown Fair, Allegany County took first place. The State team secured second place in the National poultry judging contest at New York, last January.

The team demonstration contest at the National Dairy Exposition is one of its most important and attractive interests. Maryland's team, instructed by Mr. Ray Carpenter and Mr. J. A. Conover, of the Extension Service staff, and Mr. C. E. Wise, of the Portland Cement Association, won fifth place in this contest with a demonstration of an insulated concrete milk cooling tank.

At the Eastern States Exposition, four Maryland boys killed, dressed, and cut up 185 frying chickens, demonstrating approved practices. These chickens were fried in the Maryland booth by Maryland club girls and boys and sold to visitors. This demonstration has been going on for several years. It grows more popular and receives more favorable comment in New England papers each year.

For the second time we were represented by a Maryland boy at the great National Club Congress in Chicago. This was made possible through an award offered by Montgomery Ward & Co. Funds contributed by the Maryland Bankers' Association made it possible for two boys and two girls to attend the National 4-H Club Camp in Washington.

Club Week was the most inspiring event during the year, notwithstanding three days of the hardest rain ever experienced. Complete rain-day programs prepared in advance saved the situation for the 453 club members and more than 50 county agents, county home demonstration agents, instructors, and visitors from out-of-State.

Instructions and demonstrations were given to boys in crops, forestry, dairy, swine, poultry, and farm shop subjects. The assembly conducted by President R. A. Pearson, the evening programs and the trip to Washington were high spots in the "five glorious days."

The Maryland State Bankers' Association awarded one thousand dollars to the inspirational affairs of club work as heretofore, and were generous with their praise of its accomplishments as reported by Judge Frank I. Duncan, chairman of the Agricultural Committee. Banks in nearly every county assisted local club affairs liberally as have other enterprises and individuals.

Fair associations in every county where fairs are held have been very liberal in awards to club members. The Timonium Fair directors furnished free tentage for dairy cattle, pens for swine, and a large tent for boys' quarters. They expended $1,330.00 in awards, of which $300 was given toward the expenses of the State team to the "National" in Memphis. They also gave silver cups to the three high teams in the contest.

The Baltimore and Ohio Railroad award of a one hundred dollar scholarship for meritorious demonstration work was won by Ralph England, of Cecil County, last year, and the Baltimore and Ohio renewed the offer in 1928.

An award of $25 was given by the Southern Planter to the outstanding 4-H club boy to be used for Club Week expenses.

The De Laval Separator Company, the National Dairy Exposition, and the Eastern States Exposition were also generous to our club members.

This has been a hard year among negro farmers of the State, many of them losing their berry and other crops. But negro club work increased more than 10 per cent. Because of the very bad financial conditions, it was decided to hold club achievement days in several communities on the Eastern Shore, rather than the usual three day camp. These proved great successes.

There has been evolving in the negro 4-H club work a definite long-time program which it is hoped will result in cleaner, more attractive, and more sanitary homes, more at-

tractive and better equipped farm buildings, and more productive farms on the lower Eastern Shore. As one more step in this direction, a white-wash campaign was carried out this year. In spite of constant rain during the "Clean-up and White-wash Week," over one hundred farms reported the work accomplished.

Agronomy

F. W. Oldenburg, Specialist

Corn Work: Corn is the principal crop in Maryland. During the last decade, the 550,000 acres grown annually gave an average yield of nearly 40 bushels per acre. During the 1880-1889 decade the average yield was only 24 bushels per acre, but every decade has seen an average increase of 3.6 bushels per acre.

These increased yields were brought about not only by following better practices in the preparation of the seed bed and in cultivation and fertilization, but also by better seed selection and by growing better varieties of corn.

To bring these facts before the corn growers, a series of corn meetings were planned for the Winter and Spring. In preparing for these meetings the Extension Agronomist collected more than 50 fine ten-ear samples of corn and built trays to hold the samples. Many of the corn samples had won high places at the International Grain and Hay Show, and others at the State Corn Show held in Baltimore during January. These were lent by some of the seed-corn growers for this purpose.

During January, February, and March, a series of 52 seed-corn meetings were held in 11 counties. To these meetings, farmers brought ten-ear samples of their own seed-corn and the Extension Agronomist brought the exhibit of 50 or more ten-ear samples he had collected.

At the meetings the virtues and faults of the different varieties on exhibition were discussed and demonstrations of selecting seed-corn were put on. The other factors of bringing about better yields, such as seed bed preparation, cultivation and fertilization were also discussed at many of the meetings and at a number of them junior judging contests were put on.

During April, in co-operation with Dr. Jehle and others, result demonstrations were established on seed-corn selection with special reference to internal cob discoloration, and also treating seed with mercury dust. Fertilizer demonstrations with corn were also put on. These demonstrations were established on 14 farms located in three Eastern Shore Counties and four Western Shore Counties. Satisfactory yield returns could be obtained from only part of these demonstrations, due to the fact that the corn was blown down by the September storms. As far as obtainable, the results showed the following:

1. Careful seed selection gave an increase of 4.1 bushels per acre.

2. Treating seed with mercury dust gave a negative result. While there were increases in some individual cases, the total average gave an actual loss of 2.3 bushels per acre.

3. Using a well balanced fertilizer gave an increase of nine bushels per acre of a better quality of corn.

Five-acre corn contests were conducted in Worcester County, the contestants visited in the Spring, the yields determined in October and the prizes awarded. In spite of the great damage done to the corn by the September storms, Maryland corn again won a large per cent. of the prizes for this region at the International Grain and Hay Show, including a second, fourth, and eighth place. A total of 19 places were won with corn. Maryland soy-beans won nine places including first place and the fifth, sixth, and eighth.

The Wheat Smut Campaign: As the result of last year's campaign, 211,000 bushels of seed wheat were treated with copper carbonate dust and at least as much more new seed known to be free of smut was sown by Maryland farmers. To determine how successful these treatments were and to determine how prevalent the disease was this year a careful survey was again made during the month before wheat harvest. A total of 444 wheat fields were visited. The inspection showed that 93 per cent. of the treated fields were free of smut, but that only about half of the untreated fields were free.

Wide publicity was given this matter in all the counties where smut was prevalent. In spite of the fact that these counties had been well covered during the two previous years with numerous demonstration meetings, and publications sent to nearly every wheat farmer on the control of this disease and there had been sources of supply for copper carbonate dust established in each county, there were again calls for demonstration meetings. Thirty-nine demonstration meetings in 14 counties were therefore held, showing the use and construction of the barrel dusting machine.

The county agents report that there are now 453 of these machines in their counties and 17 commercial machines; that 2,691 farmers treated their seed wheat this year, a total of 122,090 bushels.

Result demonstrations in seven different counties showed that late planting was favorable for smut and if the weather is wet at planting time it makes conditions especially favorable. They all showed that the cheaper 20 per cent. copper carbonate gave as good if not better results than the more expensive forms.

To show the effectiveness of a new dust that will also control the smut of barley, nine result demonstrations located in six counties were established with barley and five demonstrations in three counties for the control of wheat smut.

Other Field Work: In each of the five counties on the Eastern Shore conducting alfalfa campaigns, meetings were held with the leaders from all parts of the county. In Kent County a series of five field meetings were held later. Articles were prepared for the special edition that was part of the local papers on the Eastern Shore and aid given in the soil testing work, especially in showing how to select the cheapest lime.

In Allegany County a series of four lime meetings were conducted, and in Worcester County four feed and legume meetings were held in co-operation with Mr. Conover.

In March a series of meetings were held in Prince George's County on the question of soil fertility and seed corn.

Animal Husbandry

K. A. Clark, Specialist

Animal Husbandry Extension Projects, including the interests in beef cattle, swine, sheep, horses, meats, and wool, have been in charge of the Animal Husbandry Specialist who devotes his entire time to this work and directs the projects being conducted. Members of the same subject matter department, including Professor W. E. Hunt, Professor B. E. Carmichael, and Dr. DeVoe Meade, do some extension work and contribute much valuable assistance in the way of counsel, suggestions, and advice concerning the field work outlined above. Splendid co-operation has been received from the Department of Bacteriology and Chemistry. The Baltimore and Ohio Railroad, and Baltimore Union Stockyards Company, and National Livestock and Meat Board, as well as the U. S. Department of Agriculture, have all been strong factors in furthering the animal husbandry program.

The 1928 Program of Work

The chief problems in the field are in the breeding, feeding management and disposal of our live stock. We have good markets, but many of our present practices prevent our live stock from qualifying for them and making greatest returns to farmers. It is our earnest endeavor, therefore, to improve the quality of the State's live stock, to correct and encourage better feeding practices, to improve the methods of handling and caring for live stock and to reconstruct live-stock projects into economical and profitable units.

Our breeding problems are chiefly concerned with horses, hogs, and sheep. Quality among work horses appears to be decreasing all the time. Hundreds of flocks of sheep are headed by scrub rams. Many farmers over Maryland are also producing very inferior hogs. It is planned to emphasize Better Sire Campaigns in a great many of our counties. The most violent abuse of sound, sensible, and scientific feeding principles is noted in the customary way of feeding hogs. One authority has said that malnutrition is the cause of 95 per cent. of all hog troubles in Maryland. That may be high, but the wastes and inefficiencies in feeding hogs are tremendous. Rations for horses and mules are unbalanced, in-

adequate, and undesirable on many farms. Maryland live-stock men are slow to recognize and accept a number of practices and principles of management that have long been in use and thoroughly tried and proven by many progressive farmers.

Raising Better Lambs

Much progress has marked the specialists' efforts in co-operation with the agents to improve our lamb output, both in quality and quantity.

Many demonstrations in docking and castration have been conducted with worth-while results. We believe that splendid progress has been made in improving our sheep population, and for the first time, as previously mentioned, we were able to export some breeding sheep to the South.

Marketing

Special efforts have been directed toward improving the marketing of beef cattle and lambs. It is acknowledged that much undesirable influence is brought to bear by various live-stock dealers and traders. The practice in many sections where the dealer finances the farmer in the purchase of the steers and also sells them for him is very undesirable. The farmer should buy his feeder cattle and should sell them on the open market. Much similar practice is in vogue in the handling of sheep.

Baby Beeves

As previously mentioned, commendable progress has been made in the development of baby beef club work in the State. Through efforts of the specialists in co-operation with the county agent of Washington County, a remarkable lot of baby beeves have been produced in two years. This is spreading to other counties and should serve as a wonderful educational factor in improving the opportunities for producing fine quality beef in the State. The specialist reports that he is attacking the live-stock extension work in the State in approaching the following problems:

1. Scrub stock.
2. Inefficient rations.
3. Careless handling, preparation and presentation of live stock and live-stock products for market.

4. Improper encouragement of live-stock exhibits at fairs.
5. Pastures.
6. Lack of adequate live stock on many farms.
7. Poor fences, building and other equipment.
8. Wasteful handling of manure.
9. Lack of competitive demand for live stock and live-stock products.
10. Inexperience on the part of many farmers in the production of live stock.

DAIRY HUSBANDRY

J. A. Conover, Specialist

4-H Club Work

There are at present 492 calf-club members, with 572 calves.

A total of 250 calves were shown at the State and county fairs this year, many of these being shown at more than one fair.

There were 12 teams at the State judging contest this year. The following counties being represented: Baltimore, Carroll, Caroline, Dorchester, Frederick, Harford, Howard, Kent, Montgomery, Somerset, Talbot, and Queen Anne's. Kent County won first place; Harford, second, and Baltimore, third. Billie James, of Harford County; Martin Sutton, of Kent County, and Lee Howes, of Montgomery County, were the high boys, and made up the State team, which went to the National Dairy Exposition at Memphis, Tennessee, winning ninth place out of 26 teams.

Herd Improvement Associations

Reports of the associations are as follows:

County	No. of Cows	Lbs. Milk	Lbs. Fat
Anne Arundel	277	7324	298
Baltimore	Report not received from this county		
Carroll	308	8077	314
Frederick	314	7540	292
Harford	366	6652	307
Montgomery	508	7458	272

There were 53 herds that produced an average of 300 or more pounds of butterfat for the year and thus qualified for the Honor Roll certificates issued by the National Dairy Association.

3. Pure-bred Sires.

Through the assistance of the dairy specialist and county agents there have been placed 167 pure-bred bulls.

4. Better Feeding.

Dairy extension feed schools have been held in five counties, and in addition, 16 meetings relative to feeding have been held.

The alfalfa campaign in the five Eastern Shore counties has resulted in the planting of 2,500 acres of alfalfa.

5. Construction Work.

This has been a busy year from the standpoint of remodeling barns, building silos, dairy houses, and concrete cooling tanks. There have been 110 barns built or remodeled and 87 silos built, of which 31 were of monolithic concrete and 14 were of concrete staves. There have been 66 dairy houses built or remodeled, and many concrete cooling tanks installed.

6. Fair Exhibits.

The dairy exhibit at the Timonium Fair this year consisted of a pure-bred Guernsey bull and six of his daughters. These six daughters, as two-year-olds, exceeded their dams in the production of milk and fat, showing the value of a proven sire.

7. Improvement in Quality of Milk.

In co-operation with the Inter-State Milk Producers' Association, a series of meetings were held throughout the Eastern Shore at which the steps were given necessary to improve the quality of milk going to Philadelphia. In this connection three meetings were held with landlords and tenants with a view of bringing them closer together in producing milk of quality.

8. Dairying in New Territory.

During the Summer, a receiving station was built at Snow Hill, and the first shipment of milk was made in October.

The agitation for a new plant at Oakland resulted in the improvement of the old plant and a new interest among shippers, looking toward bettering their conditions.

ADVANCED REGISTRY WORK

H. C. Barker, Specialist

During the past year the administration of the advanced registry work was placed under the Extension Service to facilitate the work in co-operation with our field forces. Mr. H. C. Barker was secured to take charge of this activity in dairying. Three regular supervisors have been employed and four part-time supervisors. This service is supposed to be self supporting, as regular charges are made in order to cover the cost of the supervisors' work. The following table indicates the number of herds and the respective breeds that have been tested during the year:

Advanced Registry Testing Table

Month	Ayrshires tested	Guernseys tested	Holsteins tested	Jerseys tested	Total cows tested	Herds tested	Out of State check tests
February	30	142	106	45	323	31	2
March	32	143	123	45	343	32	2
April	31	184	126	45	386	38	5
May	71	128	146	45	390	47	0
June	57	199	144	46	496	50	6
July	56	170	135	37	398	47	3
August	57	154	148	34	393	44	1
September	58	115	148	35	357	41	0
October	59	121	220	37	436	45	0
November	58	114	222	34	*429	47	0

*Includes one Dutch Belted Cow.

The work has been reorganized and splendid co-operation has been given by the breeders in testing their cows. The "Advanced Registry News" has been sent each month to all breeders who are tested and to others specially interested in dairying and pure-bred cattle business in Maryland. The "News" has done much to obtain interest among our breeders.

Out-of-State Check Testing

Rules and regulations of the Guernsey and Holstein breeds permit their organizations to conduct re-tests at any time they desire on cows making especially good records. The check tests are done many times by out-of-State supervisors. During the past ten months we have been called upon by the Breed Associations to do 19 out-of-State check tests, including the states of Pennsylvania, New York, New Jersey, Delaware, North Carolina, South Carolina, and Mississippi.

Miscellaneous Work

Considerable work has been done with the Breed Association organizations in the State, including the Ayrshire, Guernsey, Holstein, and Jersey groups.

A club of 16 Guernsey breeders in Harford County, was organized into a bull club. The shares were sold at $50.00 each, and each man bought from one to five shares. The bull purchased was Sunnybrook Ultra Noble, and is considered a very fine animal.

The specialists assisted in a special dairy exhibit with nine grade Guernsey cows and a registered Guernsey bull at the State Fair at Timonium, the object being to show the value of a pure-bred sire and the value of keeping records on cows. Considerable work has also been done in assisting producers to meet the requirements of the Washington and Baltimore markets.

POULTRY HUSBANDRY

W. H. Rice, Specialist

The poultry specialist has been assisted in furthering poultry Extension work during the year, by Professor Roy H. Waite and George D. Quigley, of the Poultry Department. Material assistance has also been given by Dr. M. A. Jull, H. L. Shrader, and J. P. Quinn, of the Poultry Division of the Bureau of Animal Industry, U. S. Department of Agriculture.

The prime object of poultry Extension work during 1928 has been to secure the adoption of more economical practices in certain lines of production and in marketing.

Considerable emphasis has been laid on more efficient sanitation practices in the growing of both chicks and turkeys in order to reduce the heavy losses borne annually by Maryland poultry raisers through disease, parasites, and low vitality of the stock.

Poultry certification in co-operation with the Maryland State Poultry Association as a means to better breeding stock has made marked progress, especially in Washington and Caroline Counties, during 1928.

Poultry judging work with the Boys' and Girls' 4-H poultry clubs, has been an outstanding feature in this line of work again this year.

"Grow Healthy Chicks" (Brooding) Demonstrations

With the second year of this work now complete, the records at hand unquestionably substantiate the soundness of the recommended practices involved.

The use of vigorous, healthy chicks, clean houses, fresh brooding ground, balanced growing rations cleanly fed, and frequent cleaning of the houses are the chief practices emphasized. The failure on the part of most Maryland poultry raisers to furnish these essentials, largely accounts for the heavy losses each year of baby chicks.

Five counties were the scenes of result demonstrations on 47 farms, which involved more than 40,000 baby chicks, with an average mortality of 16 1/3 per cent. This loss is about one-half the estimated State average, and not all of these demonstrators followed all recommendations. Where all recommened practices were followed, the average loss is less than 10 per cent. Caroline and Somerset Counties were especially active in this work.

The average loss of 16 1/3 per cent. in 1928, as against an average loss of 19 per cent. in 1927, shows that progress is being made in better brooding practices by Maryland poultrymen.

"Grow Healthy Poults"

Turkey Brooding and Rearing

This phase of work is somewhat similar in principle to the "Grow Healthy Chicks" work. The principal practices emphasized are: Vigorous, healthy breeding stock, penned and fed for egg production, early hatching with incubators, brooding with brooders, young poults fenced on fresh ground away from chickens and mature turkeys, feeding a growing ration, and frequent cleaning and disinfection.

Six counties and 15 farms were the scenes of result demonstrations which involved about 6,500 birds, with an average mortality per farm of approximately 28 per cent.

Again, in this case, demonstrators not following all recommendations experienced heavier losses than those following all. Mortality records as low as six per cent. were turned in by the most careful observers of recommendations, while several records were below 15 per cent.

Two tours and field meetings involving the turkey farms and demonstrations in Maryland were held during the Fall, about 2,000 people attending these meetings.

Interest in better production and methods of marketing turkeys in Maryland is very high and prospects for Maryland becoming an important State in the production of high-quality turkeys is very good.

4-H Club Work

About 600 boys and girls are enrolled in poultry club work in Maryland. The flocks of these club members in most instances are mediums to improve breeding flocks in their communities, as well as to better management practices.

The placing of about 50 well-bred cockerels in 1927 and a similar number in 1928, to head the flocks of 4-H club members is aiding materially to improve Maryland poultry flocks.

This together with the poultry judging work is building higher ideals in the minds of future Maryland poultrymen in respect to the quality of their flocks.

For the third successive year, the Maryland 4-H judging team placed second in the National Contest, at Madison Square Garden, New York, in January. This team was selected from eight county teams competing at the Hagerstown Fair in October, 1927. In 1928, eight county teams again competed at Hagerstown, and the team to represent Maryland in January, 1929, at New York, has been selected.

Two former State judging team members are now in active poultry breeding work as certified poultry breeders in co-operation with the Maryland State Poultry Association.

Poultry Certification

One of the major poultry improvement activities is that of poultry certification. This work conducted co-operatively with the Maryland State Poultry Association, Inc., consists

of the examination and banding of individual birds which meet requirements which have been set for breeding birds, and the sanitary regulation of the housing and environment of such flocks. Agglutination testing of birds in some of these flocks for Bacillary White Diarrhea, and the removal of reacting individuals has also been conducted in conjunction with the certification work.

Mr. P. A. Raper, graduate of North Carolina State College, was appointed inspector in October, 1928, to succeed H. W. Rickey. Mr. Raper conducted the flock inspections and blood sampling under the direction of specialists at the University and the State Poultry Association, while the laboratory work, incident to the B. W. D. testing, was conducted at the University Poultry Disease Laboratory.

The regulations governing this work are formulated and devised at semi-annual meetings of the agencies co-operating.

A total of 56 flocks on 49 farms, totaling 16,741 birds were examined for certification. Of this number, 11,964 birds, or 71.1 per cent. of those examined, were banded as being suitable for breeding stock. Of these 56 flocks, six flocks consisting of 941 birds were given one agglutination test for Bacillary White Diarrhea. One hundred and one birds, or 10.73 per cent., reacted to the test and have been removed from the flocks.

Only certified birds are allowed to be used for breeding purposes on the farms engaging in this work.

This work continues to about double each succeeding year.

Other Work

Tours have been especially attractive during the year, four tours involving over 2,000 people have been held on the turkey work and general poultry work. Two poultry tours involving about 100 people from other states visited Maryland during the year.

Educational exhibits were made on six occasions, while eight poultry exhibits at fairs and shows were judged.

Summer feeding and culling demonstrations on demonstration flocks, Fall and Winter egg production, and house construction and yarding, have made progress under efforts devoted to these phases.

HORTICULTURE

A. F. Vierheller, Specialist

The program in fruit production was based upon increase in fruit quality, and also of quantity in case of overproducing orchards. After considering general orchard conditions, it was decided to emphasize the continued use of nitrogen fertilizers, the increase of organic matter in soils, by use of cover crops, and the increase of size and color of fruit as affected by heavier pruning of old trees, and the proper thinning of fruit.

The season has been more favorable than that of 1927, yield being about 20 per cent. higher. Fruit quality was somewhat affected, due to frequent rains which interfered with efficient spraying, and the cool weather which affected life histories of some of the most distructive insects and diseases. The heavy June drop, resulting from late freezes, affected the fruit thinning program, very little thinning being necessary.

Demonstrations in Use of Fertilizers

The use of nitrogen fertilizers, especially nitrate of soda, has been continued as one feature of the extension program in fruit growing. Some of this work is now in its fourth year. Eight demonstrations in various counties have shown a profitable increase in all cases, with especially good effect upon the spur and wood growth for the 1929 crop.

Demonstrations in Pruning

Demonstrations in pruning were held in 72 orchards, this year, 11 of which were carried as result demonstrations. Many older commercial orchards have taken on an improved appearance, and every grower involved has reported better, larger, and cleaner fruit. Some of the pruning involved trees of all ages, and fruits of various kinds and varieties. Only a few demonstrations were held in pruning of brambles and grapes, as this field was covered in former years' programs.

Cover Crops and Fruit Thinning

Various fertilizer demonstrations have shown that soil moisture is lacking in many of Maryland's orchards. Organic

matter is the answer, and much time has been given to publicity and personal service in encouraging the use of cover crops or mulch. The 21 orchard management demonstrations are showing good results from use of recommended cover crops.

Fruit thinning has been carried on the extension program for several years, but its use was only slightly necessary this season, due to late freeze which really caused almost ideal thinning of fruit.

Miscellaneous

The specialist held 74 method demonstrations before a total audience of 610 people, and 40 result demonstrations were held, covering orchard management, or such phases as pruning or fertilization. Eighty-eight visits were made to demonstrations, and 167 advisory visits paid various growers. Fifteen shows and exhibits were judged; 20 indoor meetings and four field meetings were held, at which 20 addresses were given, the total audience being 990 people. Five horticultural schools were held in various parts of the State, with good attendance. Magazine articles, a radio talk, and the writing of the State Horticultural Society News Letter have claimed some of the specialist's time.

LANDSCAPE GARDENING

W. R. Ballard, Specialist

The work in vegetable gardening has been limited mainly to advisory visits, and to the dissemination of information by correspondence, and through the distribution of bulletins and mimeograph material.

In the field of ornamental gardening there was undertaken, in co-operation with the Home Demonstration Agents, the Yard Improvement Contest, sponsored by the "Southern Planter." The final report of the contest is not due until the close of 1929, when the State prize of $50.00 will be awarded. As a result of the campaign inaugurated early in the year, 207 women enrolled for the competition.

Thirty-three formal demonstrations in landscape gardening were undertaken during the year. Twenty of these were home grounds, eight were of school grounds, and five were of

a miscellaneous character. Requests for 12 other demonstrations have been received, but time has not been available for carrying them into effect.

Forty-seven visits were made during the year to demonstrations in the process of development. In addition, visits to 259 homes were made for the purpose of giving advice on landscape problems.

Twelve issues of the "Ornamental Gardening Notes" in mimeograph form have been distributed, as well as a monthly News Letter distributed to the members of the Maryland Vegetable Growers Association.

The specialist was called upon to act as a judge in several garden contests, and 128 separate inspections were made. Twelve exhibits of various kinds were judged.

Ornamental gardening, in its various phases, is receiving increased attention generally, and increased demands are being made upon the Extension Service for assistance.

CANNING CROPS

L. M. Goodwin, Specialist

H. A. Hunter, Specialist

The effect of the extreme unfavorable weather conditions worked havoc with demonstrational projects in operation or planned for 1928. The growing conditions were so unusual that crops did not have a normal opportunity to react to cultural practices. A canning crops program, fairly wide in its scope, was adopted previous to the growing season. The program was put in operation practically as planned, but in most instances the results were disappointing, although some valuable practices were successfully demonstrated.

General Activities

Attended all the important meetings of the organizations interested in the canning crops industry. Seventeen meetings of growers were held in the State previous to growing season, a total of 612 attended. The culture of sweet corn, stringless beans, and tomatoes were the main subjects of discussion.

The Extension Service co-operated with the school of agriculture in planning and conducting a ten-day school for canners and their fieldmen. The meetings were well attended and active interest and participation in the discussion was most gratifying. The school was sufficiently successful to justify holding a similar session in 1929.

We have been in close co-operation with the Tri-State Packers Association on all problems of mutual interest.

Beans

Co-operated with H. A. Hunter, Canning Crops Pathologist, and the Experiment Station in arranging field tests on stringless beans. These tests were for the purpose of securing data in regard to anthracnose control.

Fields were inspected for the appearance of the Mexican Bean Beetle, and methods of control were advocated. The beetle has put in its appearance in all parts of the State in sufficient numbers to make control measures a necessity in 1929.

The rate of seeding of stringless beans was given attention with a view to determining the rate giving most satisfactory stands and yields. Observations indicate that one bushel per acre of varieties, such as Giant, proves most satisfactory.

Sweet Corn

To aid Maryland canners who are interested in growing their own seed stock, a program for sweet corn seed improvement was formulated and distributed. The canners were given assistance in making the stock seed selections, and in carrying out other steps in the program, in all instances were requests for such service were received.

The practice of grading sweet corn for size has become general practice with Maryland canners.

Demonstrations to test the value of removing suckers from sweet corn were continued the past year and the results were similar to those secured in 1927. A check on the yields from suckered and unsuckered corn showed no difference in yield or quality.

Peas

In test and practice, the earliest seedings of peas have, on an average, produced higher yields and superior quality. Unusually cold weather about the middle of March made 1928 an exception to the above rule. Early plantings were injured somewhat with the result that peas seeded around March 20 gave superior yields.

A project to observe the performance of strains and varieties of peas used by Maryland canners, was inaugurated by the Maryland Experiment Station in co-operation with the Extension Service. Canners were invited to submit samples from all seed lots planted in their fields. Seedsmen were also invited to submit samples of special strains or varieties for trial test. The results of the trial plot tests are available to interested canners or seedsmen.

A series of fertilizer tests, conducted in Carroll County, in co-operation with a prominent fertilizer interest, indicated that sulphate of potash is a more valuable source of potash than muriate.

Tomatoes

Ten community plant beds were conducted and 1,565,000 plants were produced. The plants were of good quality and were easily disposed of.

Five cloth-covered plant beds were tried in Maryland in 1927. The past season we had 39 such demonstrations and 1,500,000 plants were produced. The plants grown by this method were set in the field from ten days to one month earlier than open bed plants. In instances where growers had open bed plants, and those from the cold-frames in the same fields, increases in yields running as high as three tons per acre in favor of the earlier set plants were secured.

A summary of the 29 variety tests conducted during the past three years, places Indiana-Baltimore first with a yield of 7.38 tons per acre, followed by Marglobe, 7.26; Greater Baltimore, 7.16; Columbia, 6.98; Radebaugh, 6.96; Bonnie Best, 6.53; Norton, 6.28, and Stone, 613 tons per acre.

An average for the same three-year period for varieties tested on wilt infested soil gives the following results: Mar-

globe, 4.16 tons per acre; Norduke, 3.39; Columbia, 3.25, and Norton, 3.08. Non-resistant varieties, as Stone and Radebaugh, used in these tests went down with wilt and consequently in yield.

Several tests in which forms of readily available nitrogen were used as late side dressing for the tomato plants, increased yields and quality of the fruit. The plants thus fertilized were able to retain their foliage until the end of the bearing season.

Fifty-two acres of tomatoes were put out for seed saving purposes by the Tri-State Packers' Association under the direct supervision of the Maryland Extension Service Specialists. A substantial quantity of high grade seed was secured when seasonal conditions are considered. The Marglobe, Radebaugh, and Indiana-Baltimore varieties were used. Arrangements were made with the State Seed Certification Board to certify the Marglobe seed offered for sale by the Association.

A plan was formulated and a drive launched to interest Maryland growers in a Ten-Ton Tomato Club. One hundred and eleven growers having a combined acreage of 612 acres were signed up by the County Agents. Growing conditions were so unfavorable that only four qualified for membership in the club with yields of ten tons or more per acre. Several of the other growers closely approached the minimum requirement. The average yield for the growers competing in the contest is more than double that of the State average. Through the medium of the Maryland Ten-Ton Tomato Club, the production of more and better tomatoes, from fewer acres, can be stimulated.

The Maryland Extension Bulletin, "More Tomatoes from Fewer Acres," was revised to include the latest developments along lines of varieties, disease control, plant growing, and fertilization.

In co-operation with the United States Department of Agriculture, a good set of photographs of tomato production was secured. Slides from the photographs have been prepared and should prove an aid in acquainting the grower with methods of improved culture.

Other Work

Much pathological work has been done by the Pathologist in co-operation with the canners. Certification of tomato seed was started this year as a project of the Maryland Seed Certification Board. The seed acreage of the Tri-State Packers' Association, was inspected and approved for certification.

A field survey of lima beans was conducted to determine the diseases present in the State, and the damage caused by each. Tests for Fall plowing of tomato land for control of leaf blights showed good results, and a number of demonstrations were conducted in the State.

A survey of the areas of the State infected with fusarium wilt, has been conducted for a number of years past by Dr. Norton and other members of this department, and was continued this year. The survey was used as a basis for the recommendation of wilt-resistant varieties.

FORESTRY

F. B. Trenk, Specialist

Four major sub-projects featured the forestry activities of the Extension Service during the past year. They represent no new departure in the work from previous years:

1. Forest planting on waste, abandoned or eroded land.
2. Thinnings and improvement cuttings, in immature and cut-over stands of timber.
3. Proper logging methods and utilization in merchantable stands of timber.
4. Planting windbreaks and shelter belts.

A forest area constituting 22 per cent. of the total land area of the State, and an idle or waste farm land area aggregating 180,000 acres, call for constructive forestry activities. The Extension Service, working in close co-operation with the State Forestry Department, has reached a greater number of farm woodland owners than in any previous year. This is chiefly due to the enlarged field force of the Forestry Department, which has co-operated with the Extension Service in arranging for field demonstrations, and which has followed up these demonstrations with more intensive personal co-operation than would have been possible for the Extension Service to do unaided.

Plantings

Seven forest planting demonstrations and one Christmas tree planting demonstration were conducted in seven counties, in co-operation with the county agents, and these demonstrations involved the planting of 28,300 trees, the greater percentage of which were one year old loblolly pine seedlings. A majority of the plantings were set out on the Eastern Shore. The Christmas tree plantation represents the first time such a project has been taken up by a 4-H club member, and it is, also, the only specific forestry project undertaken by a club member during the year. Interest in the two small forestry plantations set out by the Harford County 4-H clubs, on their camp grounds at Rocks, continues active, and in May a rally was held at these plantations for the purpose of cutting out weeds and brush, and, in general, improving the appearance of the plantations.

The high percentage of survival of young trees in plantations which characterized the work a year ago, has been maintained. The average survival for all plantations has been well above 90 per cent. The largest plantation set out, consisting of 10,000 loblolly pine seedlings, showed a survival of approximately 99 per cent. Such successful plantations do not go unnoticed, and they are largely responsible for the confidence which has been placed in the reforestation work. Only the limitations of the State Forest Nursery have been responsible for the small number of trees planted.

Seven forest planting plans, involving 182 acres, in seven counties, have been prepared.

Woodland Improvement Work

Group demonstrations at which desirable forestry practices are shown in the woods, and the examination of woodlands owned by persons interested in better forestry practices, especially as it relates to the proper harvesting of the mature crop, have been the principal methods employed in developing woodland improvements. A total of 22 woodland improvement demonstrations in 11 counties, at which 464 persons were in attendance, were conducted.

Eight of these were conducted primarily for high school students who desired field instruction in forestry. As a result

of these demonstrations, nearly 50 requests for woodland examinations have been received. Eleven woodland examinations, involving 682 acres, have been made.

Miscellaneous

The specialist has delivered a number of miscellaneous lectures in several counties of the State, and also made several attractive exhibits at various fairs. Numerous items of publicity have been given the press, and aid rendered through county agents in giving advice on various phases to persons interested in forestry.

TOBACCO

W. B. Posey, Specialist

A special effort has been made during the past year to develop some constructive work in the improvement of our tobacco industry. Although no special provision was made, at the earnest solicitation of the tobacco growers, Mr. W. B. Posey was appointed as part-time specialist in this work. This became effective January 1, 1928.

Mr. Posey reports conducting the work in close association with Dr. R. A. Jehle, Plant Pathologist, and that he has received splendid co-operation from the Marlboro Sub-Station of our Experiment Station, and the Office of Tobacco Investigations, U. S. Department of Agriculture.

The following program of work was attempted:

1. To conduct demonstrations in steam sterilization of tobacco seed beds in order to control weeds, grass, insects, and diseases.
2. To conduct special tests with commercial fertilizers with a view of determining the most economical rate of application per acre. Also to determine the most economical potash content of mixed fertilizers.
3. To conduct demonstrations in home-mixing of tobacco fertilizers to meet special soil and crop conditions.
4. To issue timely information on the control of the "Wildfire" disease in the tobacco beds.
5. To conduct observation tours of farmers to the Government tobacco sub-station at Upper Marlboro.
6. To assist in the construction of new tobacco barns by furnishing blue prints which would be followed up by personal visits if necessary.
7. To demonstrate the value of artificial heat in preventing house-burn of tobacco, and also to produce a well cured leaf.

This program was carried out in co-operation with County Agents in the respective counties raising this crop.

Seed Bed Sterilization

Five demonstrations in sterilization of seed beds were put on, involving eight beds. Four of the demonstrations were successful. Contrary to general opinion, expensive machinery and equipment is not necessary in order to steam beds. Steam pans were made of ordinary lumber and lined with 22 gauge galvanized iron. All of the demonstrators preferred plants from the sterilized beds, to those grown in the wood beds. They stated that a higher percentage lived after transplanting, and that they grew off faster than plants from the other source.

Fertilizer Work

For many years there has been a demand for intensive demonstrational work in the proper use of fertilizers over the tobacco territory. Mr. Posey has done a great deal of this work and, of course, much work has been conducted by the Tobacco Experiment Station, at Marlboro. During the past year, Mr. Posey has conducted a number of demonstrations to show the use of various formulas on tobacco, as contrasted with each other on a check plot. He reports, that eight demonstrations of this character were put on in Southern Maryland in 1928, and that they are very popular with the growers.

Wildfire Control

In the last eight years, at least, there has been a need for investigational work with Wildfire control of tobacco seed beds in Maryland. In co-operation with the Pathologist and County Agents, many facts have been developed. Best results from an all-wet or spray preparation, were secured from home-made Bordeaux, and best from an all-dry dust, were secured from a 25 per cent. mono-hydrated copper-lime preparation.

The specialist reports many factors involved in the proper spraying of beds for the control of this disease, and that as a result of Extension Service efforts, the farmers are more and more appreciating the necessity for treating this disease effectively as well as to study troubles from other diseases of this important crop.

Tours

The specialist reports conducting several tours in Southern Maryland where tobacco growers visited various demonstrations with tobacco, as well as the Government Tobacco Sub-Station at Upper Marlboro.

In Mr. Posey's program, a total of 115 demonstrations with fertilizers were conducted, 23 with hairy vetch, five demonstrations with steam sterilization of seed beds. He reports attending 15 meetings for the promotion of the tobacco industry. It is hoped that funds will permit the specialist to devote full time to this important crop in the near future.

ENTOMOLOGY

E. N. Cory, Specialist

Control of insect pests as conducted under this project has been carried on in close association with the work of the State Horticultural Department, with Dr. Cory as State Entomologist. Assistants have been employed jointly by the Service and Department for the purpose of aiding in the spray service, and in taking care of miscellaneous insect outbreaks affecting various crops in the State.

Special efforts have been made in co-operation with the pathologists to increase the efficiency of the spray service for the horticulturists. Considerable work has been done in connection with the control of melon insects. With the outbreak of the Mexican Bean Beetle, efforts were concentrated during the past season to assist the growers to combat this new pest. Along with the annual insect pests, came the introduction of this Bean Beetle. Much work was also necessitated by the approach of the Japanese Beetle.

An extensive survey of the Japanese Beetle situation, revealed the presence of the insect at six or eight points in the State and agreement was reached with the Federal Plant Quarantine and Control Administration, so as to prevent the State being placed under Federal quarantine. This necessitated the expenditure of considerable money in the treatment for this pest and much effort of the entomologist and force were directed toward carrying out plans agreed upon.

Meetings to discuss the European Borer situation were held at several points, and the Federal authorities made a very close survey to ascertain whether this pest had, as yet, reached the State.

Considerable work has also been conducted in connection with arsenical residue so as to prevent the overspraying of our fruit.

Dr. Cory was assisted by Mr. P. D. Sanders, part of the year, also by Mr. W. T. Henerey, and Mr. G. Graham, in meeting the various requests for insect control work in the State.

PLANT PATHOLOGY

R. A. Jehle, Specialist

Extension work in plant pathology during the past year was directed mainly to interesting farmers in adopting efficient and economical methods whereby losses from plant diseases, both in yield and quality, might be reduced to a minimum.

Work centered chiefly around such crops as barley, beans, cabbage, cantaloupes, corn, cucumbers, Irish and sweet potatoes, apples, peaches, tobacco, tomatoes, and wheat.

Control of Bean Diseases

The principal bean diseases requiring attention during the year, were anthracnose and blight. Since these are both seed borne diseases, which cannot be controlled by seed treatment, a reliable supply of disease-free seed seems necessary to reduce losses from these serious diseases. Since seed certification has proven to be a very satisfactory way of getting a reliable source of seed, arrangements were made with a seed company in California to grow bean seed which would be eligible for certification, in co-operation with the State Department of Agriculture and Extension Service. This seed will be tested in Maryland next year.

Control of Corn Diseases

Seventeen demonstrations were conducted in seed corn selection with special reference to internal cob discoloration, fertili-

zation, and seed treatment. Although most of the fields were severely injured by wind storms, they showed very distinctly the value of seed selection and proper fertilization. The seed selection showed an average gain of 4.1 bushels per acre.

Control of Cucumber Diseases

Cucumber mosaic was very severe in Maryland in 1926, causing an estimated loss of 50 per cent. of the crop in Wicomico County, a money loss of approximately $100,000.00. In 1927 and 1928, demonstrations were conducted to control the disease through destruction of weed carriers, such as poke weed, milkweed, and ground cherry, in the vicinity of cucumber fields, dusting or spraying for the control of insects, and roguing diseased plants. Prior to 1927, cucumber growers did not follow these practices, but the most progressive ones have adopted them, losses from cucumber mosaic in Wicomico County, being reduced from 50 per cent. in 1926 to five per cent. in 1928, a saving to the county of approximately $90,000.00.

Control of Potato Diseases

Potato diseases cause an estimated loss of one million bushels a year to Maryland. The average annual production is about three and one-half million bushels. Losses once nearly twice as large have steadily reduced each year, due largely to the efforts of the Extension Service to acquaint potato growers with the value of better seed, spraying, seed treatment and use of proper fertilizers. In order to encourage the use of better seed, demonstration plots are grown every year using seed from various sources. Tours are conducted and growers are shown the results of these demonstrations. Diseased plants are pointed out and growers are told how to recognize and control the diseases. Home grown seed is inspected and may be certified if it meets the proper requirements. This year 85 growers applied for inspection and 39 had seed eligible for certification. These 39 growers produced 21,581 bushels of seed, some of which will be used locally and some shipped into other states.

Control of Peach and Apple Diseases

The control of diseases and insect pests is one of the most important problems of the orchardist. General recommenda-

tions for growers of Virginia, West Virginia, and Maryland are co-ordinated in so far as possible, and local problems are cared for through a spray service based on regional conditions.

Apple scale is the most difficult disease to control in Maryland orchards. The time when the apple scab fungus ripens its first spores in the Spring, not only varies from year to year, but varies in different parts of the State in the same year. This necessitates a careful microscopic study of the fungus in various parts of the State every Spring. As a result of several years' study, a method of determining the proper time to spray by the stage of the fungus has been devised, and growers are advised when to spray. During the year, results of recommendations were checked up and it was found that in almost every case, where the trees were sprayed when recommended, scab was successfully controlled. It is estimated that the recommendations for the scab spray alone saved apple growers at least $500,000 during the year.

Control of Sweet Potato Diseases

Work on the control of sweet potato diseases in 1928 was confined to certification of seed. The bin inspections of the 1927 crop were made. Seed grown by six growers was disqualified on account of diseases. Fifteen growers had seed eligible for certification, their total production being 2,733 bushels. In 1928 the fields of 23 sweet potato growers were inspected. Bin inspections for these growers will be made early in 1929.

Control of Tobacco Diseases

Mosaic and wildfire are the two most destructive diseases which confront the Maryland tobacco grower. Wildfire is a comparatively new disease in Maryland and did very little damage before 1920. Since that time it has spread to every tobacco-growing area of the State. It is usually most destructive in the seed bed but in wet summers like the summer of 1928 may be very destructive in the field. As soon as the disease began to be destructive, the Extension Service launched a campaign to combat it. Meetings and demonstrations in which seed treatment, disinfection of seed-bed covers, sanitation and seed-bed spraying or dusting were held in all im-

portant tobacco-growing regions. Prior to 1923, no seed beds were sprayed or dusted nor was seed-bed sanitation practiced. Now these practices have been adopted by at least eighty per cent. of the tobacco growers and wildfire is no longer dreaded in the seed bed.

Mosaic is still very destructive in the State and, although some efforts are being made to control it, further work will be necessary to reduce losses to a minimum.

Control of Wheat Diseases

Stinking smut is the most serious disease in Maryland wheat fields. It has been growing more severe each year but would have been more destructive had it not been for the wheat seed treatment campaign which has been conducted by the Extension Service during the past three years. Copper-carbonate dust where properly applied to the seed has been very successful in controlling the disease when the seed was not planted too late or in cold wet ground and when the seed which was treated was not too smutty. Ninety-four per cent. of the fields which were treated for smut in 1927 were free from smut in 1928, whereas sixty-four per cent. of the fields planted with untreated seed were smutty. In 1928 thirty-nine meetings were held; 19,140 pounds of copper-carbonate dust were used; 122,090 bushels of wheat were treated; 2,691 wheat growers treated seed; 6,803 smut circulars were sent out; 453 barrel machines for treating seed were made, and 17 commercial machines for treating wheat were in operation.

MARKETING

F. B. Bomberger, Specialist and Chief, Department Markets
S. B. Shaw, Specialist and Chief Inspector

During the past year the Department of Markets has continued to direct its activities toward securing a better and more profitable distribution of farm products. Numerous problems have arisen and various methods of procedure have been followed in attempting to bring about their solution. It has been demonstrated repeatedly that standardization is a very important factor involved in most of the marketing problems. This fact has been emphasized in all activities of the

Department, and it is gratifying to note a slow but steadily increasing interest among producers in putting on the markets products which more nearly meet the requirements of recognized standards.

In September, Dr. F. B. Bomberger resumed his duties as Assistant Director of the Extension Service and Chief of the State Department of Markets, after a year's leave of absence spent in developing the marketing work of the Del-Mar-Va Eastern Shore Association. During his absence of more than a year the marketing work was carried on very satisfactorily by Mr. S. B. Shaw, Chief Inspector.

Shipping-Point Inspection

Shipping-point inspection has done much in bringing about the practical application of standardization, particularly in the marketing of fruits and vegetables. Growers and shippers are coming to a keener appreciation of this service, especially as it affects their methods of grading and packing. They realize more fully the benefit of having a reliable and impartial analysis made of their harvesting and packing operations. This is evidenced by the fact that each year more requests are made for the assignment of inspectors to individual packing houses.

This year nine applicants requested service of this kind. These growers and shippers are not so much interested in the actual inspection of their cars as they are in having their product so graded and packed as to be well within grade requirements when loaded. It is this type of service which is of most value and which is being encouraged whenever possible.

Federal-State Shipping-Point Inspection has been practiced in Maryland for the past five years. The number of cars inspected each year varied with the weather, crop and market conditions, but since its inauguration in 1924 there has been an increasing demand for the service.

The Service this year began May 23 with strawberries and continued until November 18, when the last car of apples was inspected. During this six months' period 2,329 cars were inspected for thirty-four applicants.

The 2,329 cars inspected are listed as follows, with the number of cars in each grade indicated:

Product	Total No. Cars	U. S. No. 1	U. S. No. 2	U. S. Commercial	Bulk	No Grade
Apples	595	390	30	14	27	134
Cucumbers	8	1	--	--	--	7
Irish Potatoes	999	795	--	--	--	204
Peaches	57	49	--	--	--	8
Strawberries	406	2	--	--	--	404
Sweet Potatoes	112	74	--	--	--	38
Tomatoes	152	86	22	--	--	44
	2329	1397	52	14	27	839

Financial arrangements for the service continued the same as last year. The items of cost involved in salaries paid inspectors, their expense of reporting, Federal and State overhead, were pro-rated as incurred on each particular deal. The total cost thus incurred on 2,329 cars was $8,301.85, an average of $3.56 per car. This was an average of $0.29 less per car than the corresponding cost last year. Costs per car varied considerably with the tonnage involved. In no case, however, did the cost exceed $5.00 per car except in those instances where the full-time services of an inspector were requested, or where inspectors were required to make inspections at points other than those at which they were regularly located. In instances of this kind each applicant paid the additional cost of mileage expense incurred for his particular benefit.

Market Reporting

Market reporting is a service designed to furnish timely information concerning market receipts and prices, in order that producers may be enabled to distribute their products more intelligently.

Daily City Market Reports: In co-operation with the U. S. Bureau of Agricultural Economics a daily report is issued on the Baltimore market covering fruit, vegetables, live poultry, eggs and grain. This goes to a mailing list of approximately 800 and is published daily in four papers in Baltimore and one in Richmond, Virginia. The Western Union Telegraph Company is also furnished daily information on live-stock-market conditions and during the season, with daily reports on the Irish-potato situation on the Eastern Shore.

Because of the location of Baltimore with respect to various sections of the State, the city press has a widespread circulation in all rural districts and the daily papers reach these districts in a sufficiently short time to make such reports of real value.

The State Department of Markets contributes $300.00 annually to the budget of the U. S. Bureau of Agricultural Economics for the maintenance of the Baltimore office and the service rendered is well worth the amount expended.

Daily Market News Service: In addition to the continuation of the daily reports of the Baltimore City market a daily market news service was again established at Pocomoke in co-operation with the U. S. Bureau of Agricultural Economics. The service began with strawberries and continued through the season until a short time before the end of the Irish-potato shipping season. Unfortunately, lack of funds, both Federal and State, prevented continuation of this service for a longer period and made it impossible to report on other commodities as has been done in previous years. Fifty-seven reports were issued during the period and mailed to a large list of growers and shippers.

The State Department of Markets contributed $427.49 to the maintenance of this service.

Through the hearty co-operation of Senator Tydings an endeavor was made last year to secure Federal appropriation for the establishment of permanent Market News office at Pocomoke which would cover not only Irish potatoes but would include cantaloupes, cucumbers, early apples, and sweet potatoes during the shipping season. Unfortunately, Congress adjourned before final action could be had but plans have been perfected for continuation of this endeavor and this Department has been actively assembling data and information from interested parties on the Peninsula looking toward the further support of this project. In this connection active co-operation and support has been secured from the Del-Mar-Va Eastern Shore Association.

Weekly Market Reports: In addition to the Market News Service a special weekly news report was issued on the Soft Winter Wheat Market Situation which report contained brief

paragraphs on the world situation, one on the national situation, and another on the local situation including Pennsylvania, Maryland, and Virginia, and the Philadelphia, Richmond, and Baltimore markets.

Monthly News Letters: A Market News Letter was issued each month by the Department of Markets and sent to a mailing list of over 400 people.

Marketing Surveys

The purpose of conducting marketing surveys is to determine certain facts which will enable producers to make a more intelligent and profitable distribution of their products. During the past year the State Department of Markets has co-operated with the Department of Agricultural Economics of the University of Maryland and the U. S. Department of Agriculture in a number of such surveys.

Studies of consumers' preferences with respect to apple consumption are being made on the Baltimore market by Dr. S. H. DeVault, head of the Department of Agricultural Economics of the University. A similar survey and study made by Dr. DeVault and members of his Department relative to the cost of production, manufacture, and distribution of canned food products in Maryland, has been completed and is now in press.

In co-operation with the U. S. Bureau of Agricultural Economics and the Department of Agricultural Economics of the University, a survey of live-stock marketing in Baltimore was continued during the year the results of which are at this time in process of publication.

As reported last year a survey to determine the desirability of adopting U. S. Grades for Maryland Tobacco is being carried on in co-operation with the U. S. Bureau of Agricultural Economics. In connection with this survey arrangements are being perfected with the Department of Agricultural Economics of the University to continue further studies with respect to the utilization of various grades and classes of Maryland tobacco. A number of conferences have been held in co-operation with various individual growers representing local organizations and with county agents. The problems

suggested are rather extensive but it is believed that some very definite progress may be made as soon as more definite information with respect to utilization of Maryland tobacco is available.

As reported last year one of the most important marketing surveys had to do with the relocation of the Washington Farmers' Produce Market.

Conferences have been held with representatives of the U. S. Department of Agriculture, members of the National Capital Park and Planning Commission, the Superintendent of Weights, Measures, and Markets of the District of Columbia, members of farm organizations and representatives of various trade and allied business organizations.

Hearings before Congressional committees and the Capital Park and Planning Commission were participated in. Surveys were made of the present Farmers' Market and its facilities, and of the several proposed new locations and their adaptability for taking care of present needs and future development. Briefs were prepared for hearings in both the House and the Senate. Blue prints and maps were also prepared showing the relation between the present Farmers' Market and its adaptability to the proposed sites.

In connection with the relocation of the Washington Farmers' Market, practically three months' time was devoted to this effort the outcome of which is still uncertain as final action by the Senate has not yet been determined.

Wheat: In order that the maximum results might be obtained following the campaign of the Extension Service for control of smut in wheat, several attempts have been made to try to induce wheat growers to have their wheat inspected at harvest time in order that they might more intelligently place their crop on the market.

In co-operation with the Federal Grain Supervisor in Baltimore, tentative arrangements were made for inspection of wheat at shipping point. This question was taken up with the result that several conferences were held at Easton with some of the county farm leaders.

In the conference with the Federal Grain Supervisor in Baltimore it was estimated that, if the lots of wheat on the

farm which were free from smut were grouped together in car lot or other shipments and kept separated from smutty and off-grade wheat, the price such clean wheat would bring on the market would average five cents per bushel over and above the mixed lots. Assuming that this were correct, it will be seen on those farms having 1,000 bushels of clean smut-free wheat that such wheat when properly marketed would bring $50.00 more than would the same wheat if mixed with off-grade wheat. It would appear that $50.00 would be a good return for the $4.00 cost of such inspection. For some reason or other, this project did not materialize, the growers evidently not caring to make use of this service.

Tobacco: For the past two or three years the question of improving the tobacco marketing conditions in Southern Maryland has been considered. Several conferences have been held with the county agents of the tobacco counties and this question has been thoroughly discussed. In addition to this, a co-operative study of the situation has been made by representatives of the U. S. Department of Agriculture looking toward the establishment and utilization of U. S. Standards and Grades on tobacco. In this connection several visits were made to Baltimore and practically all the buyers and commission merchants handling tobacco were visited and interviewed on the subject.

The result of the conferences and interviews seems to point out the fact that if some system could be established whereby tobacco could be more carefully and uniformly assorted and packed on the farm that better prices would be obtained. Some of the larger growers are following this system to a profitable advantage but there are many instances where hogsheads of mixed grades continue to be received on the Baltimore market. It is believed that at least a partial remedy of this condition might be secured by the establishment of a central assembling point where smaller and even larger growers might bring their tobacco and have the same properly assorted with the respective assortments placed in separate hogsheads. If a system of this kind were worked out it would in no way interfere with the local buyers or the activities of the Maryland Tobacco Growers' Association.

Tomatoes: Two years ago an attempt was made to provide inspection on canning-house tomatoes the results of which if put into practice would insure the canner a better product and enable the growers to receive on an average a better price for their product. This work was carried on in co-operation with three canners on the Eastern Shore. Unfortunately, however, the work was inaugurated in a season when the price on the open market was considerably in excess of the contract price. The growers found that tomatoes of almost any kind would bring their price on the open market. Repeated efforts to revive interest in inspection on canning tomatoes have been of no avail. However, renewed efforts will be made to try to get a solution of the problem and a scheme worked out whereby the growers will be brought to realize that it will be more profitable to them to deliver to the canners a better-graded product.

Poultry: Considerable effort has been put forth in regard to the poultry industry both in respect to bringing about a better system of grading and packing of eggs and the certification of baby chicks. In co-operation with the American Railway Express Company, exhibits were prepared showing the proper way of grading and packing eggs as practiced on the Pacific Coast, the proper method of grading and packing eggs as applied to local conditions and the manner in which eggs are commonly packed and shipped from the average country receiving point.

These exhibits were a part of the poultry special train run by the B. & O. Railroad. They were exhibited on Farmers' Day at the University and at the meeting of the State Poultry Association and at the Timonium Fair.

Following the National Poultry Conference which was held in Chicago last winter and at which time the U. S. Bureau of Animal Industry failed to promulgate the tentative grades and standards adopted at that conference, a group representing the poultry interests of the Middle Atlantic and Eastern States held a meeting in Washington, D. C., at which time and at which meeting an organization known as the U. S. Official Poultry Breeders and Hatchers was promulgated.

A temporary general committee headed by Mr. A. E. Jones, of Trenton, consisting of Professor James E. Rice, of Cornell

University, Mr. E. J. Lawless, Jr., of Harrisburg, Mr. Elmer Wene, of Vineland, and Mr. S. B. Shaw, of the University of Maryland, was appointed for the purpose of developing a plan of organization including the preparation of a constitution and by-laws and for the further purpose of bringing about the development of local state units of a nation wide federation.

According to reports which have been received by the committee twenty-five states have already committed themselves to the plan which was adopted at the Chicago conference. But so far the Bureau of Animal Industry has not taken favorable action. Work along this line will be continued until something definite has been accomplished for the benefit of the hatcherymen and the poultry industry at large. This matter has been thoroughly discussed with officials of the Maryland Poultry Association and it is gratifying to know that each and every department of the University interested and involved in the program is in hearty sympathy and accord with the plan outlined by the Middle Atlantic and Eastern States.

Roadside Markets: Following the investigations which have been made by Dr. S. H. DeVault, two roadside markets were prepared this year for use in connection with Farmers' Day activities at the University. These models represented the two types of roadside markets which are considered most ideal. One was the permanent type and the other the temporary type. These models were on display at the Timonium and Hagerstown Fairs and aroused much interest.

Seed Certification: Co-operation has been maintained with the various other branches of the Extension Service in the certification of Maryland grown seed through the Seed Certification Board. Work has continued this year with Irish potatoes, wheat and sweet potatoes and activities have been extended to include barley and tomato seed.

The Department of Markets acting as financial agent for the Board has assembled all fees and procured and distributed such supplies as tags, seals and equipment. A total of $273.12 has been collected in fees from all sources.

Wheat Certification: Work has continued as heretofore. During the year, 260 acres were inspected for seven growers in two counties, namely, one in Kent and six in Harford. The

Department of Agronomy reports that because of lack of personnel it was necessary to restrict the field inspections to those growers who actually filed written requests for the service. It has been estimated by the Department that if sufficient personnel had been available for the extension of this work it would have been possible to sell at least 6,000 bushels of seed wheat this year. These growers who were able to meet the requirements for listed wheat have been selling seed wheat at an advance of from 50 cents to 75 cents per bushel. In Montgomery County 60 acres of barley were inspected for two growers. The crop from this acreage passed listing requirements.

Irish Potato Certification: Perhaps more has been done in the certification of Irish potato seed than with any other crop. Three hundred and forty acres were inspected for 85 growers. Of this number ten discontinued the work and thirty-six were disqualified. A total of 21,581 bushels of seed potatoes qualified for certification. Most of this work was done in Worcester County but some work was done in Somerset, Howard, Anne Arundel, Wicomico and Garrett Counties. All certified seed has not as yet been sold but reports of sales which have been made indicate prices ranging from $3.00 to $3.50 per barrel.

Sweet Potato Certification: During the year 33 acres of sweet potatoes were inspected for 24 growers in three counties. All of these potatoes have passed inspection but final bin inspection has not yet been made so it is impossible at this time to state the number of bushels certified. Work with this crop has continued as heretofore. Specialists handling this work state that an increased acreage of seed stock cannot be expected until a greater demand is created for such seed.

Tomato Seed Certification: In co-operation with the Tri-State Packers' Association several conferences were held with the Seed Certification Board for the purpose of determining what could be done in connection with the certification of tomato seed. As a result of these deliberations it was finally agreed that the Tri-State Packers' Association could sell Marglobe Seed under seal with accompanying certificate which states that such sealed seed was procured under the joint supervision of the Extension Service and the Tri-State Pack-

ers' Association and met the requirements of the Maryland Seed Certification Board. It is reported by the Association to date that 301¼ pounds of such seed have been sold in quarter pound packages. A total of 2,303 sealed packages have been sold.

HOG CHOLERA CONTROL

I. K. Atherton, Inspector in Charge

By virtue of the very close association between the regulatory division and activities for the control of hog cholera I feel it is interesting to incorporate briefly results of this work as conducted by Dr. I. K. Atherton, in charge, and his associates. Hog cholera was reported to exist on 946 premises against 707 a year ago and a nine-year average of 549 for the same period. Five hundred and sixty-four were classed as backyard outbreaks, while 382 occurred on farms where hogs are bred and raised. This is approximately 1.3 per cent. of such farms in Maryland. Eight hundred and ninety-nine were classed as primary or new outbreaks, while 47 were secondary infection or due to the spread of the disease from nearby premises.

Dr. Atherton reports that while, from the standpoint of number of outbreaks reported, it was a rather unsatisfactory year for hog raisers in Maryland, yet they heard practically nothing of alleged new diseases of swine which are experienced in the swine-belt states.

It is believed that efficient work has been conducted by representatives of this division in co-operation with our Extension forces in the education of our hog raisers to prevent as far as possible loss from this disease.

GENERAL EDUCATIONAL EXTENSION

C. S. Richardson, Specialist

During the past year the regular work under General Extension has been conducted by Prof. C. S. Richardson with assistance. This included lectures, motion pictures, correspondence courses and miscellaneous educational work.

Motion Pictures

There has not been a great demand for moving picture films this past year as heretofore. This is due in part no doubt to the use of the films we have on hand and our inability to purchase new ones. A large number of films have been secured from the Department of Agriculture and furnished to the agents. These films have been of great assistance in conveying educational facts as well as furnishing interesting entertainment. A total of 24 films are available for distribution.

Radio Work

No change in policy has occurred during the past year in conducting our radio work. We have been able, as previously stated, to carry out our radio program in co-operation with the Department of Agriculture in giving Farm Flashes over WRC each day during the fall, winter and spring. We have every evidence to believe that these talks have been appreciated by the farmers of the State. We have also been able to give one lecture a week on various subjects by representatives of the institution over Station WMAL. We are indebted to both of these stations for their fine co-operation with us in this work. The broadcasting work has been in charge of Mr. R. M. Watkins with assistance from Mr. M. D. Bowers. It is felt that we should devote more money to this important phase of Extension activity.

Lectures

There is a constant demand for lectures at various community meetings on educational subjects. Prof. C. S. Richardson has done a great deal of this as well as other members of the staff. There has been special demand on the part of the women for instruction in parliamentary procedure and a number of groups have met in several sections of the State for this definite purpose.

Correspondence Courses

Lack of funds has prevented us from developing our correspondence course work. We have had a limited number of courses prepared to meet the demands that have been made. It is hoped that our facilities may be improved in this important field.

AGRICULTURAL ENGINEERING

R. W. Carpenter, Specialist

Drainage demonstrations	15
Acres benefited by same	292
Farm building demonstrations	3
Building plans sent out	25
Water system demonstrations	2
Visits and conferences not resulting in demonstration	30
Meetings addressed	4
Attendance at same	360
Radio talks	1

The above results represent only a small fraction of the work which could and should be done in Farm Engineering if time were available. Thousands of farms in Maryland need tile drainage. There is a widespread need for help in remodeling existing farm buildings, and in the construction of new structures to secure maximum convenience and sanitary conditions with greatest economy. Co-operation with the home demonstration agents in their campaigns for farm home conveniences, particularly water systems, is urgently needed.

To develop the Extension Work in Farm Engineering properly in the State a full-time specialist is needed.

MISCELLANEOUS WORK

Under this head may be cited miscellaneous Extension work carried on by specialists connected with other divisions of the institution. We are indebted to Prof. J. E. Metzger, Prof. W. B. Kemp, Dr. E. M. Pickens, Mr. Geary Eppley, and others of the College of Agriculture for much help and assistance in this work. The Service is especially indebted to Dr. H. J. Patterson, Director of the Experiment Station and Dean of the College of Agriculture for his cordial support and helpful suggestions at all times.

Fairs

For many years now we have petitioned the legislature to make an appropriation to enable us to make proper exhibits at county fairs. This has been denied on each occasion on account of lack of available funds. We regret this very much as there is an insistent demand for exhibits at State and county fairs and these furnish a splendid means for impress-

ing upon our rural people many factors in improved practices in various industries. Under present conditions we do our best to get up such exhibits as our limited means will permit. We appreciate the co-operation extended by the fairs for this opportunity to aid in our Extension activities.

Extension Schools

There has been a reasonable demand for Extension Schools or Short Courses in various counties during the past year. These have mostly taken the trend of Dairy Feed Schools which have been held by specialists concerned in our dairy sections. It is hoped that we may be able to put on some Marketing Schools. We trust that this work may develop during the coming year.

SOUTHERN MARYLAND IMMIGRATION COMMISSION

This Commission concluded its work the beginning of this fiscal year, last October. The Director of Extension has served as Secretary of this Commission for the past three years. Several pamphlets were issued, including booklet entitled "Sunny Southern Maryland," which was edited by Mr. M. D. Bowers and the writer. This booklet has been sent far and wide over the country and received favorable comment. The final report of the Commission is being submitted to the present legislature. It has been the policy of the Service to co-operate with this agency for the promotion and development of Southern Maryland as far as practicable. This office will continue to answer inquiries from various sources concerning farming possibilities in Maryland.

LAND GRANT SURVEY

The Service has co-operated with the institution and with the Government in the conduct of the Land Grant Survey. The Director served as representative of the survey in visiting some adjoining states and explaining the purpose and details of this rather comprehensive study of the Land Grant Institutions.

CONCLUSION

In summing up the many activities of the Extension Service in Maryland it may be said that relations with all co-operative agencies, particularly with the U. S. Department of Agriculture, have been exceedingly cordial and sympathetic. I am likewise pleased to report the sympathetic co-operation of public agencies in all counties. There has been a slight increase in the appropriations made available for county agent work. Nothwithstanding the general demand for reduction in taxes there has been a prompt response for adequate support of Extension Service work in all counties of the State.

The outlook for Extension work in Maryland is good. People are becoming more and more familiar with the Service and requesting additional help to aid them in solving many problems. The agency force are recognizing more and more the necessity for definite programs, both long-time and yearly, for the purpose of developing the resources of the respective counties. There is a close co-ordination between the specialists' work and the agents' work.

The organization in this State which permits all agricultural activities to be directed by one board and one executive makes for efficiency, harmony and co-operation. We believe that no State offers greater possibilities for the further development of Extension Work than does Maryland.

I desire to express my warm appreciation to all members of the staff and office force for their utmost sympathetic co-operation and assistance in directing the work of the Service.

We are all indebted to the U. S. Department of Agriculture and the officials in charge of Extension Work for the splendid assistance rendered this State on any and all occasions. We are particularly pleased to record the assistance rendered and sympathetic support of the farm organizations of the State. There are many problems in this field that we are now endeavoring to work out.

Finally, I am pleased to express the appreciation of the Service and the writer to President R. A. Pearson for his sympathetic assistance in doing everything in his power to promote Extension activities in the State.

FINANCIAL REPORT FOR THE FISCAL YEAR ENDING JUNE, 30, 1928

The United States and State Appropriations Under Smith-Lever Extension Act, and State Appropriations to Offset Clarke-McNary Forestry Extension Funds, 1927-1928

	SMITH-LEVER FUNDS		State Offset to Clarke-McNary Forestry Extension Funds
	Federal	State	
Dr.			
Unexpended balance from 1926-1927	.....	.....	.....
To receipts from the Treasurer of the United States and from State sources as per appropriations for fiscal year ended June 30, 1928	$70,963.51	$60,963.51	$1,851.67
Cr.			
By Personal Services	$62,893.97	$50,168.93	1,058.37
Supplies and Materials	71.34	1,494.28	230.78
Communication Service	332.29	511.81	1.70
Travel Expenses	7,644.34	6,223.17	408.84
Transportation of Things (Service)	1.22	35.87	22.23
Printing, Binding, and Cuts for Publications	7.85	895.72	125.00
Furnishing of Heat, Light, Power, Water and Electricity (Service)	.....	1,000.00	.....
Equipment	.....	483.98	.....
Miscellaneous	12.50	149.75	4.75
Total	$70,963.51	$60,963.51	$1,851.67

SUMMARY STATEMENT OF EXPENDITURES, BY PROJECTS, SHOWING SOURCES OF FUNDS USED FOR EXTENSION WORK, FISCAL YEAR ENDING JUNE 30, 1928

Project	Total	Smith-Lever		College and State	County	Other
		Federal	State			
Administration	$15,655.75	$4,732.44	$7,420.80	$3,502.51	.....	.....
Publications	4,990.77	1,363.00	2,315.28	1,312.49	.....	.....
County Agent Work	108,255.35	35,181.80	21,886.06	17,135.49	$34,052.00	.....
Home Demonstration Work	80,754.63	17,367.06	9,542.94	26,743.03	26,326.64	$774.96
Boys' Club Work	7,485.82	1,375.11	3,164.08	192.12	.....	2,754.51
Agronomy	5,069.49	1,397.63	3,095.68	576.18	.....	.....
Animal Industry	4,536.27	920.89	2,965.91	649.47	.....	.....
Horticulture	7,844.28	2,972.04	3,482.46	1,389.78	.....	.....
Dairying	9,544.70	1,677.82	2,683.87	651.71	.....	4,531.30
Marketing and Rural Organization	*21,080.59	200.00	1,357.33	7,727.08	.....	11,796.18
Poultry	4,582.05	1,277.40	2,729.10	575.55	.....	.....
Entomology	15,175.76	795.32	200.00	14,180.44	.....	.....
Pathology	5,776.20	1,261.32	120.00	4,394.88	.....	.....
General Educational Extension	5,406.62	.....	.....	5,406.62	.....	.....
Canning Crops	7,536.03	441.68	.....	6,594.37	.....	499.98
Farm Forestry	1,851.67	.....	.....	1,851.67	.....	.....
Total Expenditure	$305,545.98	$70,963.51	$60,963.51	$92,883.39	$60,378.64	**$20,356.93

* Includes shipping-point inspection receipts.
** Total receipts disbursed for shipping-point inspection, and miscellaneous funds for personal service.

SUMMARY STATEMENT OF EXPENDITURES, BY PROJECTS, SHOWING CLASSIFICATION OF EXPENDITURES FROM ALL FUNDS USED FOR EXTENSION WORK, FISCAL YEAR ENDING JUNE 30, 1928

	Total	Personal Service	Supplies and Materials	Communication Service	Traveling Expenses	Transportation of Things	Printing, Binding and Cuts for Publications	Furnishing of Heat, Light, Power, Water and Electricity.	Equipment	Miscellaneous
Administration	$15,655.75	$10,032.50	$2,229.38	$963.73	$54.64	$26.56	.....	$1,000.00	$725.45	$623.49
Publications	4,990.77	3,537.50	.....	27.38	51.23	22.67	$1,351.99	.....	.....	.....
County Agent Work	108,255.35	80,965.40	4,016.56	5.40	23,201.43	4.06	.....	.....	.....	62.50
Home Demonstration Work	80,754.63	62,497.43	2,621.87	72.70	15,189.01	18.00	.....	.....	111.77	243.85
Boys' Club Work	7,485.82	3,818.17	43.55	2.00	3,599.05	.80	.....	.....	1.00	21.25
Agronomy	5,069.49	3,538.80	12.90	3.85	1,513.41	.53	.....	.....	.....	.....
Animal Industry	4,536.27	3,295.00	24.83	9.25	1,113.69	.17	.....	.....	92.03	1.30
Horticulture	7,844.28	6,296.00	11.85	3.77	1,506.92	.68	.....	.....	22.84	2.22
Dairying	9,544.70	7,551.25	61.75	10.04	1,904.69	1.97	.....	.....	15.00	.....
Marketing and Rural Organization	*21,080.59	14,403.28	584.62	521.48	2,283.53	22.84	.....	.....	68.50	3,196.34
Poultry	4,582.05	3,403.57	12.90	.....	1,114.72	20.86	.....	.....	30.00	.....
Entomology	15,175.76	7,613.57	3,454.99	251.97	3,109.00	89.61	16.25	.....	571.37	69.00
Pathology	5,776.20	4,485.00	94.28	4.25	1,127.71	14.88	.....	.....	50.08	.....
General Educational Extension	5,406.62	1,485.23	417.14	371.21	952.90	2,126.44	.....	.....	44.50	9.20
Canning Crops	7,536.03	5,303.00	33.37	248.09	1,923.49	3.24	.....	.....	24.84	.....
Forestry Extension	1,851.67	1,058.37	230.78	1.70	408.84	22.23	125.00	.....	.....	4.75
Total Expenditures	$305,545.98	$219,284.07	$13,850.77	$2,496.82	$59,054.26	$2,375.54	$1,493.24	$1,000.00	$1,757.38	$4,233.90

* Includes shipping-point inspection receipts.

LOCAL AGENTS

*J. F. Armstrong (col.)	Southern Maryland	Seat Pleasant
*L. H. Martin (col.)	Eastern Shore	Princess Anne

* In co-operation with the U. S. Department of Agriculture.
† Devoting part-time to Extension Work.

COUNTY HOME DEMONSTRATION AGENTS

County	Name	Headquarters
Allegany	* Maude A. Bean	Cumberland
Anne Arundel	* Mrs. Georgiana Linthicum	Annapolis
Baltimore	* Ruth Nesbitt	Towson
Calvert		Prince Frederick
Caroline	* Bessie M. Spafford	Denton
Carroll	* Agnes Slindee	Westminster
Cecil	* Priscilla B. Pancoast	Elkton
Charles	* Ula F. Fay	La Plata
Dorchester	* Hattie E. Brooks	Cambridge
Frederick	* Helen E. Pearson	Frederick
Frederick	* Katherine Baker (Assistant)	Frederick
Garrett	* Elsie M. Benthien	Oakland
Harford	* Catharine Maurice	Bel Air
Howard	* Vida N. Metzger	Ellicott City
Kent	* Helen N. Schellinger	Chestertown
Montgomery	* Blanche A. Corwin	Rockville
Prince George's	* Ethel M. Regan	Hyattsville
Queen Anne's		Centerville
St. Mary's	* Ethel Joy	Leonardtown
Somerset		Princess Anne
Talbot	* Mrs. Olive K. Walls	Easton
Washington	* Ardath Martin	Hagerstown
Wicomico	* Marian Swanson	Salisbury
Worcester	* Lucy J. Walter	Snow Hill

GARDEN SPECIALIST

Madison and Lafayette Aves. — Mrs. Adelaide Derringer — Baltimore

* In co-operation with the U. S. Department of Agriculture.

EXTENSION SERVICE BULLETINS

These will be sent free of charge to any address upon receipt of application at Office of Extension Service, College Park, Md.

No. 3—The Garden.
No. 9—Electricity on the Farm.
No. 15—Milk Cost Survey, August, 1918.
No. 17—Boys' Corn Club Lessons.
No. 23—Garden Flowers.
No. 26—Co-operative Association Law of Maryland.
No. 28—Maryland Farm Statistics (1923).
No. 30—The Marketing of Wheat in Maryland.
No. 32—Maryland Farm Statistics (1924).
No. 36—Lambs and Wool for Market.
No. 37—Winter Fattening of Steers.
No. 39—The House Dress.
No. 41—Loblolly Pine.
No. 42—Windbreaks and Shelter Belts.
No. 43—When Patterns Do Not Fit.
No. 44—More Tomatoes from Fewer Acres.
No. 45—More Tomatoes from Fewer Acres (Revised).

* Includes shipping-point inspection receipts.

SUMMARY STATEMENT OF EXPENDITURES, BY PROJECTS, SHOWING CLASSIFICATION OF EXPENDITURES FROM ALL FUNDS USED FOR EXTENSION WORK, FISCAL YEAR ENDING JUNE 30, 1928

	Total	Personal Service	Supplies and Materials	Communication Service	Traveling Expenses	Transportation of Things	Printing, Binding and Cuts for Publications	Furnishing of Heat, Light, Power, Water and Electricity.	Equipment	Miscellaneous
Administration	$15,655.75	$10,032.50	$2,229.38	$963.73	$54.64	$26.56	.....	$1,000.00	$725.45	$623.49
Publications	4,990.77	3,537.50	.....	27.38	51.23	22.67	$1,351.99	.....	.....	.....
County Agent Work	108,255.35	80,965.40	4,016.56	5.40	23,201.43	4.06	.....	.....	.....	62.50
Home Demonstration Work	80,754.63	62,497.43	2,621.87	72.70	15,189.01	18.00	.....	.....	111.77	243.85
Boys' Club Work	7,485.82	3,818.17	43.55	2.00	3,599.05	.80	.....	.....	1.00	21.25
Agronomy	5,069.49	3,538.80	12.90	3.85	1,513.41	.53	.....	.....	.....	.....
Animal Industry	4,536.27	3,295.00	24.83	9.25	1,113.69	.17	.....	.....	92.03	1.30
Horticulture	7,844.28	6,296.00	11.85	3.77	1,506.92	.68	.....	.....	22.84	2.22
Dairying	9,544.70	7,551.25	61.75	10.04	1,904.69	1.97	.....	.....	15.00	.....
Marketing and Rural Organization	*21,080.59	14,403.28	584.62	521.48	2,283.53	22.84	.....	.....	68.50	3,196.34
Poultry	4,582.05	3,403.57	12.90	.....	1,114.72	20.86	.....	.....	30.00	.....
Entomology	15,175.76	7,613.57	3,454.99	251.97	3,109.00	89.61	16.25	.....	571.37	69.00
Pathology	5,776.20	4,485.00	94.28	4.25	1,127.71	14.88	.....	.....	50.08	.....
General Educational Extension	5,406.62	1,485.23	417.14	371.21	952.90	2,126.44	.....	.....	44.50	9.20
Canning Crops	7,536.03	5,303.00	33.37	248.09	1,923.49	3.24	.....	.....	24.84	.....
Forestry Extension	1,851.67	1,058.37	230.78	1.70	408.84	22.23	125.00	.....	.....	4.75
Total Expenditures	$305,545.98	$219,284.07	$13,850.77	$2,496.82	$59,054.26	$2,375.54	$1,493.24	$1,000.00	$1,757.38	$4,233.90

* Includes shipping-point inspection receipts.

LOCAL AGENTS

* J. F. Armstrong (col.)	Southern Maryland	Seat Pleasant
* L. H. Martin (col.)	Eastern Shore	Princess Anne

* In co-operation with the U. S. Department of Agriculture.
† Devoting part-time to Extension Work.

COUNTY HOME DEMONSTRATION AGENTS

County	Name	Headquarters
Allegany	* Maude A. Bean	Cumberland
Anne Arundel	* Mrs. Georgiana Linthicum	Annapolis
Baltimore	* Ruth Nesbitt	Towson
Calvert		Prince Frederick
Caroline	* Bessie M. Spafford	Denton
Carroll	* Agnes Slindee	Westminster
Cecil	* Priscilla B. Pancoast	Elkton
Charles	* Ula F. Fay	La Plata
Dorchester	* Hattie E. Brooks	Cambridge
Frederick	* Helen E. Pearson	Frederick
Frederick	* Katherine Baker (Assistant)	Frederick
Garrett	* Elsie M. Benthien	Oakland
Harford	* Catharine Maurice	Bel Air
Howard	* Vida N. Metzger	Ellicott City
Kent	* Helen N. Schellinger	Chestertown
Montgomery	* Blanche A. Corwin	Rockville
Prince George's	* Ethel M. Regan	Hyattsville
Queen Anne's		Centerville
St. Mary's	* Ethel Joy	Leonardtown
Somerset		Princess Anne
Talbot	* Mrs. Olive K. Walls	Easton
Washington	* Ardath Martin	Hagerstown
Wicomico	* Marian Swanson	Salisbury
Worcester	* Lucy J. Walter	Snow Hill

GARDEN SPECIALIST

Madison and Lafayette Aves.	Mrs. Adelaide Derringer	Baltimore

* In co-operation with the U. S. Department of Agriculture.

EXTENSION SERVICE BULLETINS

These will be sent free of charge to any address upon receipt of application at Office of Extension Service, College Park, Md.

No. 3—The Garden.
No. 9—Electricity on the Farm.
No. 15—Milk Cost Survey, August, 1918.
No. 17—Boys' Corn Club Lessons.
No. 23—Garden Flowers.
No. 26—Co-operative Association Law of Maryland.
No. 28—Maryland Farm Statistics (1923).
No. 30—The Marketing of Wheat in Maryland.
No. 32—Maryland Farm Statistics (1924).
No. 36—Lambs and Wool for Market.
No. 37—Winter Fattening of Steers.
No. 39—The House Dress.
No. 41—Loblolly Pine.
No. 42—Windbreaks and Shelter Belts.
No. 43—When Patterns Do Not Fit.
No. 44—More Tomatoes from Fewer Acres.
No. 45—More Tomatoes from Fewer Acres (Revised).

* Includes shipping-point inspection receipts.